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ABSTRACT

The World of Inquiry School (WOIS) derived its impetus from the wish to demonstrate that quality integrated urban education was both feasible and practical. The aim was to create a school in which the ethnic mix of the student body was a microcosm of the ethnic mix of the larger community. In addition, a new organizational school system, modeled after the interest area format of informal British primary schools, was an integral part of the proposed educational plan. The school was funded as part of a larger federal project, Project UNIQUE, that was initiated by the Superintendent of the Rochester City Schools. The school was located in an inner city building in Rochester. The faculty was chosen for teaching skill, interest in innovative education, and for special knowledge and skills such as art, science, and manual arts. In planning the school, rooms were set aside as interest areas devoted to art, science, crafts, etc., but contained many other materials and activities as well. Children were assigned to family rooms in the morning and were allowed to choose the interest area of their choice in the afternoon. A family room teacher is primarily responsible for the basic instruction in language arts skills and number skills. He individualizes instruction and keeps records of each pupil's progress in the major subject areas. (Author/JM)

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Final Report

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EVALUATION OF WORLD OF INQUIRY SCHOOL

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August 1, 1974

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NATIONAL SCIENCE FOUNDATION

Curriculum and Instruction Development Program

Pre College Education and Science

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Preface

There are no standardized procedures for evaluating open education. Statistical comparisons are inadequate in terms of depicting the integrated aspects of an innovative school. Our evaluation was designed to measure specific areas, namely those areas that are traditionally thought to be important and measurable. We made no attempt at evaluating all aspects of the school, indeed as the evaluation progressed, we became aware of the fact that we were looking at areas which should not be considered in isolation.

It is our belief that the overall impact of attending the World of Inquiry School is greater than the sum of its many separate effects upon achievement and self. Unfortunately, our report speaks only to these part effects and not to the more general overriding effects. We could not measure nor predict the kind of people the World of Inquiry school graduates but we did have the impression that society would approve of the way those graduates turned out.

As with any such project, a number of people made substantive contributions. We would like to acknowledge the cooperation of the Rochester City School District, William Pugh, Administrator of the World of Inquiry School and his staff and the following people who were directly involved in the World of Inquiry Evaluation.

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Introduction

In the 1960's traditional American education was attacked and challenged on many fronts. The demise of progressive education in the early 1950's bore witness to a new concern that the aim of education was to teach children how to think, and not how to be well adjusted. The launching of the sputnik by the Soviets in 1957 added to the clamor of critics arguing that American education, particularly science education, had to be updated and modernized. The civil rights movement of the sixties added to the ferment by bringing the poor quality of urban education to the attention of the American people at large. And the women's rights movement added demands for quality day care and early education programs. Educational reform became the pedagogical passowrd of the seventies.

It was in the context of those complex educational pressures that the World of Inquiry School (WOIS) was conceived and created. Its impetus came from the wish to demonstrate that quality integrated urban education was both feasible and practical. The aim was to create a school in which the ethnic mix of the student body was a microcosm of the ethnic mix of the larger community. But bringing children of diverse backgrounds together was only part of the project. In addition, a new organizational school system, modeled after the interest area format of informal British primary schools, was an integral part of the proposed educational plan. The school was funded as part of a larger federal project, Project Unique, that was initiated by the then Superintendent of the Rochester City Schools, Herman Goldberg and his staff. Project Unique itself, was under the direction of William Young.

The school was located in an inner city building at 46 Moran Street in Rochester. The principal of the school was, and is, William Pugh. The faculty was chosen for teaching skill, interest in innovative education and for special knowledge and skills such as art, science and manual arts. In planning the school, rooms were set aside as interest areas devoted to art, science, crafts, etc., but contained many other materials and activities as well. Children were assigned to family rooms in the morning and were allowed to choose the interest area of their choice in the afternoon. The school and its objectives are well described in the article by Young, Pugh, Iman, and Ness (1969):

> "The school is organized around the family rooms. There is a childhood unit with three and four year olds, four primary units with ages ranging from 5 through 8, four intermediate units for those 8 through 11, and a primary through intermediate unit with children 5 through 11. In addition to the family units, there are interest areas in science, health, physical education, art, music, library and material resources, social studies, and industrial technology. Each center is staffed by a certified teacher who is sometimes assisted by a teacher aide and highly competent resource persons from the community. The interest center staff is available to any child who wants to spend some time in the center.
>
> ## General Behavioral Objectives
>
> The child will demonstrate skills in:
>
> A. Effectively using and caring for instructional resources and media.

B. Self-direction and self-discipline within a free environment.

C. Reading, writing, and arithmetic on standardized tests.

D. Knowledge, thinking and understanding in areas and in ways specified by the teaching staff.

E. Inquiry by:

- defining and selecting areas of interest.
- successfully completing some small tasks within these areas.
- devising his own strategies for solving problems.
- testing his hypothesis against reality.
- experimenting and trying new approaches to reach a desired goal.
- applying acquired skills to the solution of new problems, and discovering new ways to apply acquired skills.

The child will demonstrate an attitude of:

A. Interest in learning by:

- high attendance record
- participating in an increasing variety of experiences and content areas.
- continuously progressing in skill development.
- carrying on his learning activities outside of school.

B. Love for himself by:

- accepting and freely expressing emotions in socially acceptable ways.
- resolving and/or coping with certain frustrations and difficulties.
- seeking help when necessary
- attempting tasks beyond his immediate ability but not beyond his possible reach.
- independently selecting and rejecting experiences as part of his learning activity.

C. Love for others by:

- working with and aiding others regardless of differences.
- meeting, seeing and interacting with persons of the community.
- seeing information and experiences related to other cultures.
- listening to and utilizing the ideas of others.

The teacher will enable the child to achieve the objectives by:

- providing a variety of experiences and a free environment.
- diagnosing his needs and achievements and suggesting alternate activities.
- interacting positively with the child, the parents, and the community; explaining and assisting the individual to understand our program.

These general objectives are then refined and applied to specific areas.

A family room teacher is primarily responsible for the basic instruction in language arts skills and number skills. He individualizes instruction and keeps records of each pupil's progress in the major subject areas. Preparation of a single lesson or assignment for use with the entire group is unlikely. Among the major innovations that are being introduced is the use of "adjunct" faculty members. These are talented, though non-certified teachers from the community who are making a great contribution to the educational program. They are primarily used in interest areas with multi-aged and multi-ethnic groups with a wide range of ability.

The family room teacher works in a cooperative relationship with all staff members and diagnoses and prescribes for the individual needs of the pupils. He also has the responsibility for individual and group planning and guidance. The family room teacher also provides for parent conferences to discuss and evaluate individual pupil growth and progress. At the time of the conference other materials related to the child's work or social development are discussed with the parent. The family room teacher arranged for other specialists to be involved.

Children move freely throughout the school, from family room to interest areas and vice versa, both individually and in groups to participate in a variety of activities.

The general behavioral objectives are also applied in the interest areas.

Instructional Program

Art Interest Area - the aims and objectives for the art program are:

- to stimulate through art an appetite for creativity as an enriching, integral part of the life of every human being.
- to recognize that art on the elementary school level primarily provides opportunities for independent thinking and that the end product is only secondary.
- to promote the sense of freedom with which every young child participates in art - unless stifled by the restrictive influences of adults, engendered by a lack of understanding of the child's point of view.
- to encourage potentially artistic students to work in-depth in the areas of their selection.
- to develop sensitive consumers of art.

Technology Interest Area

The aims and objectives for the program are:

- pupils are introduced to a variety of raw products, processes, tools and materials. They acquire an appreciation for the skill, ingenuity, patience and time required to produce a finished product.
- pupils are given an objective media for expressing purposeful ideas and are helped to discover and to develop natural abilities.

- pupils are placed in a natural social situation through which certain character traits can be observed and developed.

- pupils are provided with worthwhile manipulative activities.

The pupils are able to work on individual projects of their own choice in any of the following areas:

1. woodworking
2. ceramics
3. metals
4. graphic arts
5. plastics
6. electricity
7. photography
8. power
9. welding

The prerequisite for individual projects is that each pupil must have a plan before attempting a project in any area of the shop. The classroom teacher utilizes technology in order to:

- add dimension to learning situations.

- stimulate purposeful reading and accurate observation and encourage individual and group research.

- add variety and interest to classwork.

- provide an opportunity to apply principles of construction and design and to develop and encourage creativity.

- provide additional channels to retention.

Health Interest Areas

The nurse-teacher:

- provides first aide if necessary in case of accident or emergency.

- provides services to teachers, recognizes health problems which may affect learning, socialization, etc.

- works with parents concerning children's health needs at all levels.

- works with children's discussion groups, centered around their interests, inquiries, and questions concerning their health.
- provides materials, books, films, etc., so to increase pupil's concern about good health, and thus be better able to assume responsibility for his health needs.

Social Studies Interest Area

Pupils come on an individual basis or with a family group.

Social studies is the study of people and their interaction. It includes what is often divided into sociology, economics, geography, psychology, anthropology, government and history. The social studies program is designed to prepare students to meet in a responsible manner, the challenges of an increasingly urban and culturally diverse environment.

Since students are constantly engaged in social interaction, social learning takes place continually in all parts of the school. All family unit groups spend some time working with social studies skills and concepts.

As an interest area, individuals and groups come to explore topics and activities of particular interest. While this room serves as a base, most of the group activities take place elsewhere in the school (particularly in the library and conference room), and on field trips in the community. Community resources are used extensively in an effort to be where the action is.

Social studies activities emphasize observation, organization of information, recognition of relationship, (interdependence, causality, etc.) generalization, application of generalizations, map skills, research skills, basic knowledge of concepts and facts, value clarification, appreciation of cultural diversity and understanding of motivation of self and others. Basic concepts and skills are developed.

Science Interest Center

Youngsters come on an unscheduled basis from family groups.

The science program involves the family room as well as the interest centers. Ideally, the family room is the place where the initial interest originates. The science interest center serves as a supplement to the learning that takes place in the family room. Units have been taught in the family room including such topics as earthworms, batteries, bulbs, mold gardens, and kitchen physics. Since each child is equipped with his own materials, the units provide instant success for children and feedback for teachers to evaluate and coordinate the efforts of each child. The materials are a far cry from the traditional lecture-book oriented science materials. They also function as a springboard or interest for participation in the science interest center, a resource center where children can continue their classroom experiences, delve into previous work in depth, or explore new areas using more sophisticated equipment.

The science interest center differs markedly from the ordinary science room in a traditional school. It is a non-scheduled classroom in which a very few or very many children may be working at any one time and students representing the entire age spectrum may be working together. The physical plan of the center may vary from week to week depending upon its utilization. At present, it is broken up into several areas which include the conference center, the zoo, the physics center, and the botany-geology center.

Since children enter the science lab on a non-scheduled basis, they are free to experiment in any one of the centers and are only limited by the materials available in the room. More generally, the role of science is less to train young children to function as scientists than to acquaint them with ways of getting information and solving problems in all subject areas."

Among the many values represented in this school arrangement are the following. Adults trust children to make decisions and choices regarding their own education. Secondly, education is experience based and children are given the opportunity to work at materials or activities for sufficient time to fully assimilate them. Thirdly, teachers and children help create their own curriculum materials and are not bound to commercial kits. Fourth, the school is part of the community, rather than separate from it. Parents and adults with special skills and talents are always welcome. And the children frequently go into the community to visit stores, to study city government and to provide volunteer services to some good cause.

When seen in action, the school impresses the observer as "humming", as reflecting children and adults who are self-directed and busy at work that they themselves have chosen. Although the children are free to move about, there is no aimless wandering and when young people are moving they always have a place to go. One gets the impression of freedom, of industry, of mutual respect and of joy and pleasure in what they are about. In this school, childhood is valued as an important period of life in its own right and not merely as a preparation for life as an adult.

Over the years since its inception, the World of Inquiry has changed somewhat as a result of funding pressures (and administrative shifts). Classrooms are somewhat larger and the ethnic mix is not as representative as it once was. But the organization and basic aims of the school remain the same. And, to the observer, the school retains its hum of directed activity, meaningful work and pleasurable everyday school experience.

II. History of the WOIS Evaluation

During the fall of 1968 at the request of Project Unique, Dr. David Elkind, of the University of Rochester's psychology department, was asked to conduct an evaluation of some of the social consequences of attendance at the World of Inquiry School In conncection with this project, a small pilot evaluation was undertaken. In the pilot study there were five children at each age level from six years of age to eleven years of age from WOIS. A comparable number of children of the same age distribution, attending the public schools and drawn from the WOIS waiting list were chosen as a control group. The children were matched for sex, age, and for the socioeconomic status of their parents (job, income or education) but not for achievement or school grade. Because of illness, invalid tests and the like, only 24 of the children in each group completed all testing. The children were examined on four types of social measures that were either adapted from existing tests or were constructed for this evaluation. The tests were: a Self Concept measure, a Creativity measure, a Need Achievement measure and a Social Attitude measure.

As a result of the pilot evaluation and with the financial support of Project Unique, further investigations during the spring of 1969 were conducted by Dr. Elkind and his staff. Academic achievement as well as social aspects of behavior were examined. In order to assess academic achievement, results from the Metropolitan Achievement Test Battery were tabulated for children ages six to eleven attending WOIS and compared with national norms for the school years

1967-1968 and 1968-1969. In addition, mean scores were tabulated for all children who took pre- and post-tests on the same measures.

During the last half of the 1968-1969 school year, three social measures were administered to a number of children. A Social Distance Scale was devised to assess racial attitudes in children. This measure was given to 20 WOIS children and 20 children from the middle city. The children were matched for age and sex. The Self Concept Test which was used in the pilot evaluation, was administered to 132 students from WOIS. To study classroom atmosphere, sixteen college students observed in 32 classrooms. Two observers sat in each classroom and used a check list to rate such behaviors as teacher/student interactions. In addition, a well known Creativity Test (Wallach and Kogan, 1965) was used in the pilot evaluation. Due to the unexpected results obtained with this test, an additional study was conducted using WOIS children (Elkind, Deblinger, and Adler, 1970).

At this point, a more elaborate design for the evaluation of WOIS for the school year 1969-1970 and for the future years was developed and subsequently carried out. It was decided to administer six social measures to 33 second and third grade children from WOIS and 33 second and third graders selected from WOIS waiting list. The children were matched insofar as possible for age, sex, socioeconomic status, family background and school achievement. The waiting list children were located in 26 different schools scattered throughout Monroe County.

The following measures were administered: Self Concept, Need Achievement, Anxiety Scale, Creativity, Pupil Attitude and Social Distance to the WOIS group and the waiting list group. In addition, another evaluation procedure (constructed by the WOIS evaluation team) was tried out with a larger population. This procedure was an assessment of classroom atmosphere in WOIS as well as in representative classrooms in the inner city, middle city, outer city and suburban schools. To assess academic achievement, results of the Metropolitan Achievement Test Battery were tabulated for all children in WOIS for the school year 1969-1970. All scores of children taking pre- and post-tests on the same measures were tabulated. Three year profiles of all children (regardless of age) who were in continuous attendance for the first three years that the school was operating, were also tabulated. Reports of these evaluations were submitted to Project Unique and the WOIS.

It is important to point out that during the 1969-1970 school year, continued financial support for WOIS was in serious question. Since support had to be sought elsewhere, a proposal was submitted to the National Science Foundation requesting assistance to help run the school and to continue the evaluation. The proposal was funded in July, 1971. Because of the lateness of NSF funding, the evaluation team had to use its own financial resources to continue the evaluation during the spring of 1971. Again, the design of the previous year was employed. Academic achievement was assessed by the Stanford Achievement Test administered to all children at WOIS. In addition, two social and one academic measure were given. The measures administered were: Self Concept, Test Anxiety with a lie scale included and the Wide Range Achievement Test. Due to attrition, the matched groups of children had decreased from 33 matched pairs to 24 matched pairs of WOIS and waiting list children.

In order to validate and refine the tests constructed by the evaluation team, a research program was conducted during the summer of 1971. The program involved a day camp which ran for eight weeks with a different group of children each week. Most of the children were given tests such as the Pupil Attitude, Self Concept, Creativity and the Social Distance Scale. Since the same children were given all of the tests, it was possible to correlate the results and to validate them against adjective check list data on the children collected by the day camp staff.

Based upon the results from the summer camp, measures for the 1971-1972 evaluation were chosen. In order to have some continuity in the evaluation, it was decided to continue with the matched group of 24 subjects used in the previous evaluation (1970-1971).

The matched groups of 24 subjects were given the following measures: Self Concept, Test Anxiety, Creativity, Need Achievement, a revised Pupil Attitude, a revised Social Distance and the Wide Range Achievement Test. All children at WOIS were given the Interest Inventory questionnaire and a Classroom Atmosphere and Day Observation study was conducted on a larger population.

In additon to testing the matched pairs, the Stanford Achievement Test was administered to all children in the WOIS and the results were compared with the national norms. One of the problems in dealing with achievement tests was the fact that the schools gave different achievement tests in successive years. As one of the many possible solutions to this difficult problem, no one of which was entirely satisfactory, the evaluation team statistician (Michael Davidson) decided to transform all achievement test scores into percentile scores. This transformation made possible comparison of achievement test data of WOIS children.

Another problem that arose in dealing with the achievement data was that the central administration recommended that tests be given to children based on their achievement level rather than on their grade level as specified in the testing manuals.* To deal with this situation, the evaluation team retested every child at the WOIS who took an inappropriate level test. A conversion score was developed for the inappropriate level test score and compared to the score the child received when taking the correct level test for his grade level. Since correlations between these two scores were quite high, it was decided to use this conversion method for all future (out-of-level) achievement testing.

During this year an attempt was also made to locate children who had participated in the WOIS evaluation, who had graduated and were now attending junior high or high school in the Rochester area. Twenty-nine such graduates were located and interviewed on a specially devised questionnaire. The graduates were also tested on the following measures: Self Concept, Pupil Attitude, Test Anxiety and the Wide

---

* Administered according to the principle "The Right Test for The Right Child".

Range Achievement test. Locating the graduates proved to be quite difficult and time consuming, due to the fact that reorganization of the city schools was then in progress.

As the evaluation progressed, the sample of matched children decreased significantly due to children moving out of the area. This reduced sample size created the possibility that some real differences that might exist between the WOIS and control children would not be large enough to be significant on a statistical basis. Accordingly, a new design was evolved for the 1972-1973 evaluation. A new sample of children was selected that included three groups, 1) Eighty children who attended WOIS one year or more (Ex_1), 2) Forty children who attended WOIS less than 1 year (Ex_2) and 3) Eighty children who had never attended WOIS but were on the waiting list (Cnt.). The groups were matched insofar as possible for age, sex, race and geographic location. The following measures were administered to 195* children in the evaluation sample: Stanford Achievement test, Interest Inventory, Otis Quick Scoring Mental Ability Test, Creativity Test, Self Concept Test, Attitude Toward Teacher and Attitude Toward School (Stanford Achievement tests were also administered to all the children at WOIS). During this time two separate validation studies, one on self concept and one on social distance, were conducted with large non-WOIS groups of children.

This brief overview of evaluation activity over a six year span makes it clear that both the evaluation design and the measurement instruments went through a constant process of revision and refinement during the evaluation period. The price paid for these changes was some loss of comparability from year to year. What was gained was more adequate instrumentation and sampling. The decision to change the design and instruments seemed the appropriate course to the evaluation team and it believes that the benefits gained outweigh the information that was lost.

---

* Five children of the Ex_1 group did not complete testing

III. Standardized Achievement Testing

The presentation and interpretation of achievement test data presents special problems. Some of these problems reside in the tests, some in the circumstances of testing and others in more general considerations. It is necessary to look at each of these problems in turn. With regard to the tests, the problems are well known. No test, particularly a group test, is free from ambiguities of wording or material. Any given child's performance may be as affected by a wrong approach or misunderstanding of directions as it is by absence of ability. In many ways the child is putting what he regards as the best answer against what the test maker regards as the best answer. Obviously, tests are not the only instruments that should be used to assess a child's performance or ability.

Many circumstances affect a child's test performance. A teacher who is uninterested or hurried will have a different influence on the youngster than will a trained examiner who is willing to help with questions and to set an encouraging tone for the test situation. The child's willingness or unwillingness to leave an activity in order to be tested is another factor affecting test performance.

One of the most important general factors to consider when looking at achievement test data is the "atmosphere" of the school. The WOIS appears to have suffered unusual fluctuations ranging from excitement and enthusiasm in the beginning two years to an almost demoralized quality in the third year resulting from continued uncertainty as to its future. Because of a cut in its funds, parts of the program as well as staff were eliminated. There was an understandable change in the emotional climate of the school when staff members and students were uncertain about their futures. It is difficult to assess such effects but surely they had an impact.

Other problems such as the lack of comparability among tests and administration of inappropriate tests have already been discussed so, too, have the solutions the evaluation team arrived at for solving these problems. All of these circumstances should be used as cautions against taking the achievement data as the final word on the accomplishments of WOIS children.

The achievement data will be presented in several ways. In particular, Tables 1 to 8 present three year profiles of achievement for the same group of children. Table 1, to illustrate, gives the three year profiles of children who entered the WOIS at the age of three and who were in continuous attendance at the school for the first three years of the school's existence. Unfortunately, the same tests were not given at each age level, so comparisons have to be made in a gross quantitative sense because statistical tests are not really possible with these data. Perhaps a few examples will help to illustrate the problem. In Table 1, the mean IQ of the group on the Peabody is 81 in the fall of 1967 whereas it was 117 in the spring of 1968. Does this mean that the group increased some 36 points in a year as a result of WOIS attendance? Probably not. First of all, the sample was extremely small. Secondly, three year old children with no former school experience are likely to be frightened and inhibited and this is bound to reflect on their test performance. Part of the change in IQ score may mean that children felt more comfortable with themselves, with the school and with the tester after a year, and that they gave a better performance as a result. Accordingly, the change from a mean IQ of 81 to a mean IQ of 117 for the children is likely to reflect in part, at least, a change in performance due to an increased comfort in the testing situation. Some, but certainly not all of the 36 IQ point change is thus attributable to WOIS attendance. The less dramatic change in the four year old group (Table 2) supports this interpretation since four year old children are likely to be a little more mature and less skittish than three year olds. Their performance was thus less depressed by the new situation than was true for the threes. Again, the difference is even less for the fives (Table 3).

Although it is difficult to draw hard and fast conclusions from these data, some tentative generalizations can be attempted. First of all, WOIS children as a group, during the first three years of the school's existence, were, almost without exception, performing above the national norms in standard intelligence and achievement tests. Secondly, the effect of WOIS attendance seems most pronounced if the children begin their attendance fairly early in their school career. That is to say, three years of WOIS attendance appears to be more beneficial if it comes during kindergarten, first and second grade than if it comes later. This conclusion is supported by the year by year analysis of achievement data provided in Tables 9 through 14.

If the results of the achievement test findings presented in Tables 1 though 14 are truly valid, then they are of considerable significance. They suggest, as Bloom's (1964) statistical analysis clearly indicates, that 50% of a child's standard of academic achievement is attained by third grade. Consequently, the implication is clear that attendance at the WOIS will be most beneficial to those children who can commence their education at that school or transfer to it before they reach third grade. But there are many unknowns. It is not possible to say, for example, what happens to a child who transfers out of the WOIS after three years of attendance.

During the first three years of the WOIS evaluation, Metropolitan Achievement Test Batteries, revised edition 1963, were used in addition to New York State Reading Test, Metropolitan Readiness and Peabody Picture Vocabulary Test to assess academic achievement in the city school district. All scores were reported in grade level figures except for the Peabody and the Metropolitan Readiness Tests. In 1969, however, the Rochester School District chose the Stanford Achievement tests, revised edition 1964, for the purpose of assessing academic achievement for the succeeding three years (1970-1971, 1971-1972 and 1972-1973).

Up until the end of the 1971 school year, tests at WOIS had been administered and scored by the teachers. This was very time consuming and often confusing for the teachers. Beginning with the 1971 school year, all administration and scoring of achievement tests was supervised by the WOIS evaluation team. Also during this year, the City School District proposed that children be given tests commensurate with their achievement level, rather than their age and grade level. This proposal, in itself, had some merits since there was little knowledge to be gained by giving a child a test that was either below or above his capacities.

As suggested briefly in the history, this procedure created great difficulties for the evaluation staff. One may assume that a child will score at approximately the same grade level regardless of what level test he or she takes. However, the child will not receive the same percentile score on different level tests. For example, a nine year old child, would usually be in the fourth grade and should be given a Stanford Intermediate I test. However, if the teacher felt that a particular nine year old child was performing at a third grade level this child would be given a Stanford Primary II test. Suppose the child received a raw score of 30 which gave him a grade score of 4.4 and a percentile score of 66, which meant he was performing better than 66% of the grade three population on which the test was standardized. But what did this mean in terms of his own age group?

In order to deal with this particular problem, the evaluation staff attempted several different methods of converting out-of-level test scores, one of which proved to be successful. During the spring of 1972 any child who took a test at a level inappropriate for his or her age level was given the appropriate test. A conversion percentile score was developed for the out-of-level test score and compared to the percentile score the child received when taking the correct level test for his or her age and grade level.

The correlation for (appropriate and inappropriate administration of) the Word Meaning section of the SAT was .96 and for Paragraph Meaning section of the SAT was .92. The actual conversion method was as follows: If a child was given an out-of- level test, the grade score the child received on that test was used with the appropriate percentile tables for his or her age and grade level for the particular time of the year the test was administered. Using the previous example of a nine year old child performing at a third grade level who received a grade score of 4.4 on a SAT Primary II and employing the end of the year norms for grade three, it was determined that he had attained a percentile score of 66. Using the method of conversion, devised for the evaluation, with grade four norms of the SAT Intermediate I test, resulted in the child attaining a percentile score of 38.

In adopting this conversion method and the decision to use only percentile scores in order to compare different tests over a six year period, it was necessary to eliminate any comparison between WOIS and the rest of the City School District, since City School District data involved only grade scores. Table 15 shows the average percentile standing of all WOIS children tested each year from the time the school opened in the fall of 1967 up until the spring of 1973. The WOIS school population was superior to national norms in achievement during the first four years with essentially the same distribution each year. With the exception of the 1971-1972 year, WOIS pupils scored at least 5 points above the average on national norms.

Another way to assess the academic benefits of attending the WOIS is to look at the changes in achievement over a period of time for particular children. Table 16 reports the mean difference scores for the same children who were tested in the two consecutive years shown under Change Period. As Table 16 indicates, there was a significant drop in achievement from 1970-1971 to 1971-1972 but a significant increase from 1971-1972 to 1972-1973. Oddly enough, the increase in achievement coincides with an average increase in class size by 15 pupils between 1971-1972 and 1972-1973 periods. This was produced by the reduction in number of home classrooms and not by an increase in the number of children in the school.

Like the data in Table 15, the findings reported in Table 16 are difficult to interpret. So many changes, problems and difficulties beset the school during the early 1970's that it is hard to say what happened when and what produced fluctuating achievement data. Up until 1971-1972, however, the achievement level of WOIS pupils was fairly stable and consistently above the average for national norms.

Table 1

Achievement Testing -- 3 Year Table

(This table presents the test scores of children entering the World of Inquiry in the Fall of '67 at 3 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all of the following tests) Number of children = 4

When Tests Were Given	Test Administered	Type of Score	Results
Fall '67	Peabody (Nursery) age 3	IQ	Mean = 81
Spring '68	Peabody (Nursery) age 3	IQ	Mean = 117
Spring '69	Peabody (Nursery) age 4	IQ	Mean = 119
Spring '70	Metro. Readiness (Kindergarten) age 5	letter grade	Mean = A*

*A indicates "superior readiness status" for 1st grade work.

Achievement Testing -- 3 Year Table

(This table presents the test scores of children entering the World of Inquiry in the Fall of '67 at 4 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all the following tests) Number of children = 8

When Tests Were Given	Test Administered	Type of Score	Results				
Fall '67	Peabody (Nursery) age 4	IQ	Mean = 79				
Spring '68	Peabody (Nursery) age 4	IQ	Mean = 108				
Fall '68	Metro Readiness (K) age 5	letter grade	Mean = D*				
Spring '69	Metro I (K) age 5	Grade Equivalent national norm for this grade = 1.0		Wrd. Know.	Wrd. Dis.	Read.	Arith.
			Mean =	1.8	1.9	1.7	1.9
Spring '70	Metro I (1st) age 6	Grade Equivalent national norm for this grade = 1.8	Mean =	2.3	2.4	2.3	2.6

*D indicates "low normal readiness status" for 1st grade work.

Table 3

Achievement Testing -- 3 Year Table

(This table presents the test scores of children entering the World of Inquiry in the Fall of '67 at 5 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all the following tests)
Number of children = 16

When Tests were Given	Test Administered	Type of Score	Results					
Fall '67	Peabody (K) age 5	IQ	Mean = 106					
Spring '68	Peabody (K) age 5	IQ	Mean = 121					
Fall '68	Metro Readiness (1st) age 6	letter grade	Mean = A*					
Spring '69	Metro I (1st) age 6	Grade Equivalent national norm for this grade = 1.8		Wrd. Know.	Wrd. Disc.	Read.	Arith.	
			Mean =	2.6	3.0	2.8	3.5	
Spring '70	Metro II (2nd) age 7	Grade Equivalent national norm for this grade = 2.8		Wrd. Know.	Wrd. Disc.	Read.	Spel.	Arith
			Mean =	3.8	3.9	3.4	3.5	3.6

*A indicates "superior readiness status" for 1st grade work.

Table 4

Achievement Tests -- 3 Year Table

(This table presents the test scores of children entering the World of Inquiry in the Fall of '67 at 6 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all the following tests)
Number of children = 8

When Tests Were Given	Test Administered	Type of Score	Results							
Fall '67	Metro Readiness (1st) age 6	letter grade	Mean = B*							
Spring '68	Metro I (1st) age 6	Grade Equivalent national norm for this grade = 1.8		Wrd. Know.	Wrd. Disc.	Read.	Arith.			
			Mean =	2.7	2.5	2.8	2.9			
Spring '69	Metro II (2nd) age 7	Grade Equivalent national norm for this grade = 2.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Arith.		
			Mean =	4.4	4.0	4.2	3.7	3.8		
Spring '70	Metro Elementary (3rd) age 8	Grade Equivalent national norm for this grade = 3.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Arith. Solu
			Mean =	5.4	4.9	5.1	4.5	5.0	4.3	4.4

*B indicates "high normal readiness status" for 1st grade work.

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Table 5

Achievement Testing -- 3 Year Table

(This table presents the test scores of children entering the World of Inquiry in the Fall of '67 at 7 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all the following tests)
Number of children = 10

When Tests were Given	Test Administered	Type of Score	Results							
Fall '67	Metro II (2nd)	Grade Equivalent		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Arith.		
	age 7	national norm = 2.0	Mean =	2.8	3.0	2.9	2.6	2.6		
Spring '68	Metro II (2nd)	Grade Equivalent								
	age 7	national norm = 2.8	Mean =	4.0	3.6	3.7	3.5	3.5		
Spring '69	Metro Elementary (3rd)	Grade Equivalent		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solv.
	age 8	national norm = 3.8	Mean =	4.4	4.2	4.1	4.0	3.8	3.9	4.1
Spring '70	Metro Elementary (4th)	Grade Equivalent								
	age 9	national norm = 4.8	Mean =	5.3	4.9	5.3	5.1	5.1	4.8	5.4

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Achievement Testing -- 3 Year Table

(This table presents the test scores of children entering the World of Inquiry in the Fall of '67 at 8 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all the following tests)
Number of children = 5

When Tests Were Given	Test Administered	Type of Score	Results							
				Wrd. Know.	Read.	Arith. Comp.	Prob. Solu.	Arith. Conc.		
Fall '67	N.Y.S. 3rd Grade (3rd) age 8	Stannine or Percentage (New York State norms)	Mean = Mean =	6 70%	6 55%	4 25%	5 50%	5 50%		
Spring '68	N.Y.S. 3rd Grade (3rd) age 8	Stannine or Percentage (New York State norms)	Mean = Mean =	7 85%	7 85%	5 45%	6 75%	7 85%		
Fall '68	Metro Elementary (4th) age 9	Grade Equivalent		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Arit Sol
		national norm = 4.0	Mean =	5.2	4.6	4.6	4.7	3.5	3.3	3
Spring '69	Metro Elementary (4th) age 9	Grade Equivalent national norm = 4.8	Mean =	6.0	5.4	5.9	5.1	5.2	4.1	4
Spring '70	Metro Intermediate (5th) age 10	Grade Equivalent		Wrd. Know.	Read.	Spell.	Lang.	Lang. Skills	Arith. Comp.	Arith. P Solu.
		national norm = 5.8	Mean =	6.2	6.9	6.8	5.0	6.0	5.2	5.7
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Mean =	4.8	5.9	6.4				

Achievement Testing -- 3 Year Table

(This table presents the test scores of children entering the World of Inquiry in the Fall of '67 at 9 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all the following tests)
Number of children = 11

When Tests Were Given	Test Administered	Type of Score	Results							
Fall '67	Metro Elementary (4th) age 9	Grade Equivalent		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	P S
		national norm = 4.0	Mean =	4.6	4.9	5.0	5.4	4.9	4.0	
Spring '68	Metro Elementary (4th) age 9	Grade Equivalent								
		national norm = 4.8	Mean =	5.7	5.2	5.6	6.0	5.6	4.6	
Spring '69	Metro intermediate (5th) age 10	Grade Equivalent		Wrd. Know.	Read.	Spell.	Lang.	Lang. Skills	Arith. Comp.	Ari
		national norm = 5.8	Mean =	7.4	7.2	5.8	6.1	6.2	5.4	
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Mean =	6.2	7.2	6.5				
Spring '70	Metro Intermediate (6th) age 11	Grade Equivalent		Wrd. Know.	Read.	Spell.	Lang.	Lang. Skills	Arith. Comp.	Arith Sc
		national norm = 6.8	Mean =	8.2	8.0	7.3	6.6	7.7	6.4	6
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Mean =	6.9	7.1	7.4				

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Achievement Testing -- 3 Year Table

(This table presents the test score of children entering the World of Inquiry in the Fall of '67 at 10 years of age who were in continuous attendance for the 3 years of the schools existence (Fall '67 - Spring '70) and who took all the following tests)
Number of children = 3

When Tests Were Given	Test Administered	Type of Score	Results							
Fall '67	Metro Intermediate (5th) age 10	Grade Equivalent national norm = 5.0		Wrd. Know.	Read.	Spell.	Lang.	Lang. Skills	Arith. Comp.	Arith. Solu.
			Mean =	6.0	5.4	7.4	6.2	6.2	5.2	5.2
Spring '68	Metro Intermediate (5th) age 10	Grade Equivalent national norm = 5.8	Mean =	6.5	6.4	7.2	6.3	7.3	6.0	6.8
Spring '69	Metro Intermediate (6th) age 11	Grade Equivalent national norm = 6.8	Mean =	7.8	7.9	8.1	6.7	7.3	5.9	6.7
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Mean =	8.1	8.9	7.8				
Spring '70	Metro Advanced (7th) age 12	Grade Equivalent national norm = 7.8		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	
			Mean =	7.6	8.2	9.2	6.6	8.7	7.2	
				Arith. Prob. Solu.	Soc. St. Info.	Soc. St. Skills	Sci.			
			Mean =	8.0	8.3	9.2	7.9			

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Table 9

Achievement Tests '69 - '70 -- New Children

(This table presents the mean scores for children entering the World of Inquiry for the first time in the Fall of 1969 and who were still there in the Spring of 1970 and who took the same pre and post tests.)

When Tests Were Given	Test Administered	Type of Score	Results							
Pretest - Fall '69 Post test - Spring '70	Metro Readiness (Kindergarten) age 5 N = 16	letter score	Pre-mean = D Post mean = B							
Pretest - Fall '69 Post test - Spring '70	Metro I (1st grade) age 6 N = 11	grade equivalent pre-norm = 1.0 post norm = 1.8		Wrd. Know.	Wrd. Disc.	Read.	Arith.			
			Pre-mean =	1.4	1.4	1.4	1.4			
			Post mean =	2.2	2.2	1.8	2.5			
Pretest - Fall '69 Post test - Spring '70	Metro II (2nd grade) age 7 N = 2	grade equivalent pre-norm = 2.0 post norm = 2.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Tot. Arith.		
			Pre-mean =	3.6	3.3	3.3	3.0	2.8		
			Post mean =	3.7	3.7	3.3	3.8	4.0		
Pretest - Fall '69 Post test - Spring '70	Metro Elementary (3rd grade) age 8 N = 7	grade equivalent pre-norm = 3.0 post norm = 3.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
			Pre-mean =	4.1	3.9	4.2	3.4	3.4	2.8	3.5
			Post mean =	4.6	4.2	5.0	4.6	4.5	3.8	4.2

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Achievement Tests '69 - '70 -- New Children

(This table presents the mean scores for children entering the World of Inquiry for the first time in the Fall of 1969 and who were still there in the Spring of 1970 and who took the same pre and post tests.)

When Tests Were Given	Test Administered	Type of Score	Results							
Pretest - Fall '69 Post test - Spring '70	Metro Elementary (4th grade) age 9 N = 9	grade equivalent pre-norm = 4.0 post norm = 4.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
			Pre-mean =	5.6	5.1	5.4	6.0	5.1	4.0	5.0
			Post mean =	6.0	5.5	6.4	6.4	6.1	5.2	5.6
Pretest - Fall '69 Post test - Spring '70	Metro Intermediate (5th grade) age 10 N = 1	grade equivalent pre-norm = 5.0 post norm = 5.8		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	Prob. Solu.
			Pre-mean =	6.6	6.6	6.3	6.3	7.0	5.2	6.0
			Post mean =	7.1	9.2	6.1	5.9	8.0	5.8	[illegible]
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Pre-mean =	4.6	5.3	7.4				
			Post mean =	4.8	5.3	10.0+				
Pretest - Fall '69 Post test - Spring '70	Metro Intermediate (6th grade) age 11 N = 1	grade equivalent pre-norm = 6.0 post norm = 6.8		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	Prob. Solu.
			Pre-mean =	9.2	8.7	8.7	7.5	7.0	4.9	5.3
			Post mean =	10.0+	10.0+	9.8	7.1	7.4	6.3	7.5
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Pre-mean =	10.0+	7.1	6.8				
			Post mean =	10.0+	10.0+	8.4				

4 children came in at mid year and were tested (at K level, 2nd grade, 3rd grade, and 5th grade) and had made progress 4 months later on a re-test.

Table 10

Achievement Tests 1967-68

(This table presents the mean scores for all children in the school from the Fall of 1967 till the Spring of 1968 who took a pre and post test on the same measure)

When Tests Were Given	Test Administered	Type of Score	Results
Pretest - Fall '67 Post test - Spring '68	Peabody (Nursery) age 3 N = 4	I.Q.	Pre-mean = 69 Post mean = 113
Pretest - Fall '67 Post test - Spring '68	Peabody (Nursery) age 4 N = 10	I.Q.	Pre-mean = 79 Post mean = 114
Pretest - Fall '67 Post test - Spring '68	Peabody (Kindergarten) age 5 N = 18	I.Q.	Pre-mean = 108 Post mean = 121
Pretest - Fall '67	Metro Readiness (1st grade) age 6 N = 15	letter grade	Mean = B*
Post test - Spring '68	Metro I (1st grade) age 6	Grade equivalent national norm for this grade = 1.8	Wrd. Know. 2.5 (N = 13) Wrd. Dis. 2.6 (N = 13) Read. 2.8 (N = 11) Arith. 2.9 (N = 13)

*B indicates high normal readiness for 1st grade work. Test only given in Fall.

2 children did not take reading section. Test only given in Spring.

Achievement Tests 1967-68

(This table presents the mean scores for all children in the school from the Fall of 1967 till the Spring of 1968 who took a pre and post test on the same measure.)

When Tests Were Given	Test Administered	Type of Score	Results							
Pretest - Fall '67 Post test - Spring '68	Metro II (2nd grade) age 7 N = 10	Grade Equivalent national norm for pretest = 2.0 post test = 2.8		Wrd. Know.	Wrd. Dis.	Read.	Spell.	Arith.		
			Pre-mean =	3.3	3.0	3.1	2.7	2.6		
			Post mean =	4.0	3.6	3.6	3.6	3.5		
Pretest - Fall '67 Post test - Spring '68	N.Y.S. - 3rd (3rd grade) age 8 N = 13	Stannine N.Y.S. norms*		Wrd. Rec.	Read.	Tot. Rd.	Arith. Comp.	Prob. Solu.	Arith. Con.	
			Pre-mean =	4	5	5	3	4	4	
			Post mean =	6	6	6	5	5	6	
Pretest - Fall '67 Post test - Spring '68	Metro Elementary (4th grade) age 9 N = 15	Grade Equivalent national norm for pretest = 4.0 post test = 4.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
			Pre-mean =	5.1	4.9	5.0	5.4	5.1	4.0	4.4
			Post mean =	5.9	5.2	5.6	6.2	5.7	4.6	5.2
Pretest - Fall '67 Post test - Spring '68	Metro Intermediate (5th grade) age 10 N = 14	Grade Equivalent national norm for pretest = 5.0 post test = 5.8		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	Ar c
			Pre-mean =	6.4	6.0	6.4	5.9	6.5	5.1	5.
			Post mean =	6.7	6.8	6.6	5.9	6.7	5.7	5.

*These are beginning 3rd grade norms.

Table 11

Achievement Tests 1968-69

(This table presents the mean scores for all children in the school from the Fall of 1968 to the Spring of 1969 who took a pre and post test on the same measure.)

When Tests Were Given	Test Administered	Type of Score	Results
Pretest - Fall '68 Post test - Spring '69	Metro Readiness (Kindergarten) age 5 N = 8	letter grade	mean = D[1]
Spring '69	Metro I (Kindergarten) age 5 N = 11	Grade Equivalent national norm = 1.0	Wrd. Know. Wrd. Disc. Read. Arith.[2] 2.0 2.1 1.8 2.1
Pretest - Fall '68 Post test - Spring '69	Metro Readiness (1st grade) age 6 N = 18	letter grade	mean = A[3]
Pretest - Fall '68 Post test - Spring '69	Metro I (1st grade) age 6 N = 12	Grade Equivalent national norm pre = 1.0 post = 1.8	Wrd. Know. Wrd. Disc. Read. Arith. Pre-mean = 1.7 1.6 1.2 1.6 Post mean = 2.5 2.9 2.6 2.3

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[1] Low normal readiness for children who would be entering 1st grade.

[2] 1st grade test administered to some kindergarten children at the end of the K year.

[3] Superior readiness for children entering 1st grade.

Table 11 (cont'd)

Achievement Tests 1968-69

(This table presents the mean scores for all children in the school from the Fall of 1968 to the Spring of 1969 who took a pre and post test on the same measure.)

When Tests Were Given	Test Administered	Type of Score	Results							
Pretest - Fall '68 Post test - Spring '69	Metro II (2nd grade) age 7	Grade Equivalent national norm pre = 2.0 post = 2.8		Wrd. Know. N = 18	Wrd. Disc. N = 19	Read. N = 19	Spell. N = 18	Tot. Arith N = 18		
			Pre-mean =	3.3	3.4	3.1	2.6	2.9		
			Post mean =	4.2	5.0	4.0	3.8	3.8		
Fall '68	N.Y.S. - 3rd (3rd grade) age 8 N = 19	stannine N.Y.S. norms		Wrd. Rec.	Read.	Tot. Rd.	Arith. Comp.	Prob. Solu.	Arith. Conc.	Tot. Arith.
			mean =	5	6	6	4	5	5	5
Pretest - Fall '68 Post test - Spring '69	Metro Elementary age 8 N = 22	Grade Equivalent national norm pre = 3.0 post = 3.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
			Pre-mean =	3.9	3.6	3.6	3.4	3.1	3.1	3.6
			Post mean =	4.3	4.1	4.3	3.9	3.7	4.0	4.3
Pretest - Fall '68 Post test - Spring '69	Metro Elementary (4th grade) age 9 N = 12	Grade Equivalent national norm pre = 4.0 post = 4.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
			Pre-mean =	4.7	4.3	4.3	4.3	3.4	3.2	3.8
			Post mean =	5.4	4.9	5.3	4.6	4.7	4.0	4.4

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[4] Different N's for some subtests, one child did not take all subtests.

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Table 11 (cont'd)

Achievement Tests 1968-69

(This table presents the mean scores for all children in the school from the Fall of 1968 to the Spring of 1969 who took a pre and post test on the same measure.)

When Tests Were Given	Test Administered	Type of Score	Results							
Pretest - Fall '68 Post test - Spring '69	Metro Intermediate (5th grade) age 10 N = 17	Grade Equivalent pre = 5.0 post = 5.8		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	Pr Sol
			Pre-mean =	6.4	6.5	5.3	5.5	6.1	4.7	4.
			Post mean =	7.3	7.2	5.9	6.4	6.8	5.4	5.
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Pre-mean =	5.4	5.7	5.8				
			Post mean =	6.2	7.1	6.7				
Fall '68	N.Y.S. - 6th (6th grade) age 11 N = 17	Stannine N.Y.S. norms		Wrd. Rec.	Read. Comp.	Total Rding.	Arith. Comp.	Prob. Solu.	Arith. Conc.	Arith. Tot.
			mean =	5	5	5	3	4	3	4
Pretest - Fall '68 Post test - Spring '69	Metro Intermediate (6th grade) age 11 N = 18	Grade Equivalent pre = 6.0 post = 6.8		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	Pr Sc
			Pre-mean =	7.1	6.8	6.3	5.7	7.1	5.3	5.
			Post mean =	7.7	7.6	7.6	6.6	7.2	5.8	6.
				Soc. St. Info.	Soc. St. Skills	Sci.				
			Pre-mean =	6.6	6.4	6.7				
			Post mean =	7.3	6.9	7.6				

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Table 12

Achievement Tests - Spring 1969

(This table presents the mean scores for all tested children in the World of Inquiry in the Spring of 1969.)

When Tests Were Given	Tests Administered	Type of Score	Results					
Spring 1969	Peabodies (Nursery) 3 + 4 year olds N = 16	I.Q.	mean = 104					
Spring 1969	Metro I[1] (Kindergarten) age 5 N = 11	Grade Equivalent norm = 1.0	mean =	Wrd. Know. 2.0	Wrd. Disc. 2.1	Read. 1.8	Arith. 2.1[1]	
Spring 1969	Metro I (1st grade) age 6 N = 21	Grade Equivalent norm = 1.8	mean =	Wrd. Know. 2.5	Wrd. Disc. 2.8	Read. 2.6	Arith. 2.6	
Spring 1969	Metro II (2nd grade) age 7	Grade Equivalent norm = 2.8	mean =	Wrd. Know. N = 20 4.0	Wrd. Disc. N = 20 4.0	Read. N = 20 4.0	Spell. N = 20 3.7	Arith. N = 19[2] 3.8

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[1] 11 children of kindergarten age took this 1st grade test and were a year above grade level.

[2] One child did not take the arith. section of the test.

Table 12 (cont'd)

Achievement Tests - Spring 1969

(This table presents the mean scores for all tested children in the World of Inquiry in the Spring of 1969.)

When Tests Were Given	Tests Administered	Type of Score	Results							
Spring 1969	Metro Elementary (3rd grade) age 8 N = 21	Grade Equivalent norm = 3.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
			mean =	4.5	4.3	4.5	4.2	3.9	4.0	4.3
Spring 1969	Metro Elementary (4th grade) age 9 N = 12	Grade Equivalent norm = 4.8		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
			mean =	5.4	4.9	5.0	4.6	4.7	4.0	4.4
Spring 1969	Metro Intermediate (5th grade) age 10 N = 17	Grade Equivalent norm = 5.8		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	Prob. Solu.
			mean =	7.2	7.1	6.0	6.3	6.8	5.5	5.6
				Soc. St. Info.	Soc. St. Skills	Sci.				
			mean =	6.0	7.0	6.5				
Spring 1969	Metro Intermediate (6th grade) age 11	Grade Equivalent norm = 6.8		Wrd. Know. N=17	Read. N=17	Spell. N=17	Lang. N=17	Lang. St. Skills N=17	Arith. Comp. N=17	Prob. Solu. N=17
			mean =	7.6	7.5	7.4	6.7	7.2	5.7	5.9
				Soc. St. Info. N=17	Soc. St. Skills N=17	Sci. N-16[3]				
			mean =	7.2	6.9	7.7				

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[3] One child did not take the science section of these tests.

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Achievement Tests 1969-70

(This table presents the pre and post scores for children who took the same test in either the Spring or Fall of 1969 and the Spring of 1970.)

When Tests Were Given	Tests Administered	Type of Score	Results							
Pre-Spring or Fall of 1969	Peabody (Nursery) 3 + 4	I.Q.	Pre-mean = 88							
Post-Spring 1970	N = 20		Post mean = 99[1]							
	Metro I	Grade Equivalent		Wrd. Know.	Wrd. Disc.	Read.	Arith.			
Pre-Spring 1969	(Kindergarten) age 5	norm = 1.0	mean =	2.0	2.1	1.8	2.1			
Post-Spring 1970	(1st grade) age 6 N = 11	norm = 1.8	mean =	2.5	2.8	2.5	2.7			
	Metro Elementary	Grade Equivalent		Wrd. Know.	Wrd. Disc.	Read.	Spell.	Lang.	Arith. Comp.	Prob. Solu.
Pre-Spring 1969	(3rd grade) age 8	norm = 3.8	mean =	4.3	4.1	4.2	3.9	3.8	3.9	4.2
Post-Spring 1970	(4th grade) age 9 N = 21	norm = 4.8	mean =	5.0	4.7	5.2	4.8	4.9	4.9	5.3
	Metro Intermediate	Grade Equivalent		Wrd. Know.	Read.	Spell.	Lang.	Lang. St. Skills	Arith. Comp.	Prob. Solu.
Pre-Spring 1969	(5th grade) age 10	norm = 5.8	mean =	7.0	7.0	5.9	6.0	6.6	5.4	5.5
Post-Spring 1970	(6th grade) age 11 N = 16	norm = 6.8	mean =	8.0	7.6	7.2	6.4	7.9	6.5	7.2
				Soc. St. Info.	Soc. St. Skills	Sci.				
			mean =	5.9	6.8	6.4				
			mean =	6.3	6.7	7.2				

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[1] 6 Nursery children were tested in the Spring of '69, fourteen were new children in the Fall of '69 and tested at that time.

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Table 14

Achievement Tests - Spring 1970

(This table presents the mean scores for all children in the World of Inquiry in the Spring of 1970 except for 5 children who can not take tests in a group or at their age level.)

When Tests Were Given	Tests Administered	Type of Score	Results					
Spring 1970	Peabodies (Nursery) 3 + 4 year olds N = 20	I.Q.	mean = 99					
Spring 1970	Metro Readiness (Kindergarten) age 5 N = 23	letter grade	mean = B[1]					
Spring 1970	Metro I (Kindergarten) age 5 N = 14	Grade Equivalent norm = 1.0	mean =	Wrd. Know. 1.8	Wrd. Disc. 1.9	Reading 1.8	Arith. 2.0[2]	
Spring 1970	Metro I (1st grade) age 6 N = 24	Grade Equivalent norm = 1.8	mean =	Wrd. Know. 2.3	Wrd. Disc. 2.4	Reading 2.1	Arith. 2.5	
Spring 1970	Metro II (2nd grade) age 7 N = 23	Grade Equivalent norm = 2.8	mean =	Wrd. Know. 3.5	Wrd. Disc. 3.6	Reading 3.3	Spelling 3.4	Arith. 3.6

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[1] B equals high normal readiness to do 1st grade work.

[2] Out of 22 children of kindergarten age 14 took this 1st grade test and are about a year above grade level.

Achievement Tests - Spring 1970

(This table presents the mean scores for all children in the World of Inquiry in the Spring of 1970 except for 5 children who can not take tests in a group or at their age level.)

When Tests Were Given	Test Administered	Type of Score	Results
Spring 1970	Metro Elementary (3rd grade) age 8 N = 26	Grade Equivalent norm = 3.8	mean = Wrd. Know. 4.9 · Wrd. Disc. 4.4 · Read. 5.1 · Spell. 4.5 · Lang. 4.6 · Arith. Comp. 4.1 · Prob. Solu. 4.2
Spring 1970	Metro Elementary (4th grade) age 9 N = 33	Grade Equivalent norm = 4.8	mean = Wrd. Know. 5.3 · Wrd. Disc. 5.0 · Read. 5.6 · Spell. 5.2 · Lang. 5.2 · Arith. Comp. 5.0 · Prob. Solu. 5.3
Spring 1970	Metro Intermediate (5th grade) age 10 N = 13	Grade Equivalent norm = 5.8	mean = Wrd. Know. 6.7 · Read. 7.1 · Spell. 6.6 · Lang. 5.5 · Lang. St. Skills 6.4 · Arith. Comp. 5.5 · Prob. Solu. 5.8 mean = Soc. St. Info. 5.4 · Soc. St. Skills 6.0 · Sci. 6.7
Spring 1970	Metro Intermediate (6th grade) age 11 N = 18	Grade Equivalent norm = 6.8	mean = Wrd. Know. 8.0 · Read. 7.6 · Spell. 7.3 · Lang. 6.4 · Lang. St. Skills 7.7 · Arith. Comp. 6.4 · Prob. Solu. 7.0 mean = Soc. St. Info. 6.3 · Soc. St. Skills 6.8 · Sci. 7.1
Spring 1970	Metro Advanced (7th grade) age 12 N = 7	Grade Equivalent norm = 7.8	mean = Wrd. Know. 7.5 · Read. 8.1 · Spell. 7.7 · Lang. 6.2 · Lang. St. Skills 8.9 · Arith. Comp. 6.0 · Prob. Solu. 6.9 mean = Soc. St. Info. 7.2 · Soc. St. Skills 7.5 · Sci. 7.8

Table 15

Mean National-Norm Percentiles on Standardized Achievement Tests, World of Inquiry Children

YEAR	VERBAL TESTS ONLY	
	%	N
1967-68	61.62	120
1968-69	57.24	146
1969-70	58.93	191
1970-71	59.75	168
1971-72	50.82	180
1972-73	55.11	161

Table 16

Yearly Change in Achievement Level of Individual World of Inquiry Children

VERBAL DATA

CHANGE PERIOD	N	MEAN CHANGE	t
1967-68 - 1968-69	106	- 2.25	- 1.17
1968-69 - 1969-70	122	1.87	1.21
1969-70 - 1970-71	122	- 1.74	- 0.98
1970-71 - 1971-72	121	- 7.64	- 5.43***
1971-72 - 1972-73	100	3.69	2.68**

* P .05
** P .01
*** P .001

Each child's average yearly change is the slope of the best-fitting straight line to his average data for each year tested.

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ACHIEVEMENT HIGHLIGHTS

TIME	MEASURES	POPULATION	RESULTS	COMMENTS
Spring 1968	Metropolitan Achievement Test	WOIS Children	School population superior to national norms	Achievement [illegible] limited to ve[illegible] tests
Spring 1969	1) Metropolitan Achievement Test	WOIS Children	School population superior to national norms. No significant mean change for children tested in two consecutive years.	
Spring 1970	Metropolitan Achievement Test	WOIS Children	School population superior to national norms. no significant mean change for children tested in two consecutive years.	
School Year 1970-1971	1) Stanford Achievement Test 2) Wide Range Achievement Test	1) WOIS children 2) matched group of 24 subjects	1) WOIS population superior to national norms. no significant mean change for children tested in two consecutive years. 2) No difference	

TIME	MEASURES	POPULATION	RESULTS	COMMENTS
School Year 1971-72	1) Stanford Achievement Test 2) Wide Range Achievement Test	1) WOIS children 2) matched group of 24 subjects 29 graduates of WOIS	1) Dropped to national norm. Significant average drop for children tested in two consecutive years. 2) No difference for matched group. graduates at grade level in reading	
School Year 1972-73	1) Stanford Achievement Test 2) Otis Quick Scoring Mental Abilities Test 3) Stanford Achievement Test	1) WOIS children 2) and 3) 40 children attending WOIS less than one year - 80 children attending WOIS more than one year - 80 children from the waiting list. (N=195, five children did not complete testing.	1) WOIS population superior to national norm. Significant average increase for children tested in two consecutive years. 2) and 3) Using a factor achievement score there was no difference for school attendance but a significant difference for race.	

IV. Yearly Evaluation Studies

A history of the WOIS evaluation procedures has been presented in Section II of this report. It will be seen that many of a particular year's evaluation procedures and results are interrelated with the procedures and results of the previous years and are so stated. At the same time, however, the ongoing evaluation reflected changes not only in the WOIS, but also in the procedures of the evaluators. It is not possible, therefore, to compare one year precisely with any other year. Since there were and are no proven methods to evaluate innovative educational programs, there was a continuing attempt to develop such methods. In this section, the year by year findings of the evaluation team are presented. At the end of each presentation a highlight of the year's findings are summarized.

Because many of the tests used in the evaluation were constructed or modified by the evaluation team, a complete description of these tests is given in Section V. In the case of tests that were revised several times, the successive revisions are also described. On the other hand, commercially available tests are readily available and familiar and so are not reproduced in this report.

1968-1970

The report for 1968-1969, as well as the reports for the succeeding years, is divided into two parts: academic achievement and a variety of non-academic or social measures. Academic achievement results are based on standardized achievement tests prescribed by the Rochester City School District. The non-academic effects of WOIS attendance that were assessed in the 1968-1969 school year were social distance, self concept, classroom atmosphere and creativity. A description of these measures of non-academic effects and their subsequent modifications is provided in Section V of this report.

Academic Achievement

Achievement Testing

Academic achievement was measured by the Metropolitan Achievement Test batteries appropriate for ages six to eleven. For WOIS children aged six, seven and eight, their median grade equivalent for all MAT categories was above test norms for that grade level. For WOIS children age nine and above there were some areas where the median grade scores were below test norms. All of these results are shown in Table 17.

Non-Academic Measures

Racial Attitudes

To assess the effectiveness of WOIS racial integration, an attempt was made to develop an assessment of racial attitudes in children. A pilot project, submitted to Project Unique in January, 1969, employed two measures. One presented pictures of black and white children in various situations and the children were asked to tell stories about what was happening in the pictures. Stories were scored for negative and positive racial attitudes. Another measure asked children to draw both a black and a white child. Drawings were examined for such features as relative size and detail in each drawing. There were no significant differences between WOIS children and the matched sample from Rochester Public Schools on any of these measures.

Social Distance

A social distance measure was developed which is also described in greater detail in Section V. This involved placement of black and white male and female doll figures on a simulated playground in response to various situations described by the examiner. Distances between the figures were measured and the results are given in Table 18. The subjects were 20 WOIS and 20 children from the middle city, who were matched with the WOIS children for age and sex. Four age groups from 5 to 12 were represented and there were 12 black and 28 white children.

A statistical test for significance of the difference between the placements of children attending the two schools on the three situations was not significant. However, this may have been due to the small size of the sample. Although the differences did not reach statistical significance, they did suggest that WOIS's children placed figures closer together than did middle city youngsters.

Self Concept

In an attempt to gauge the effectiveness of the WOIS experience on children's feelings of self worth, a self concept measure was constructed. This test is described in detail in Section V. Briefly, the test involved 40 adjectives, 20 of which suggested positive traits and 20 of which suggested negative traits. The adjectives were read to 132 WOIS students grades K through 6. At the first reading the subjects were asked to say which adjectives described themselves and at the second reading, they were asked which adjectives described the person they would like to be. The results are presented in Tables 19 and 20.

As Tables 19 and 20 show, there were no differences between the age groups or between the Puerto Rican, Black and White children with respect to their self image conceptions. For the majority of WOIS children, self concepts were quite high. This self concept test was used in all the succeeding years of the evaluation.

Classroom Atmosphere

Perhaps one of the most important aspects of innovative educational approaches is the atmosphere in the classroom. Atmosphere includes such things as the relationship of the teacher to the child, the degree of teacher- or child-initiated interactions, the attitude toward discussion on the part of the teacher, and similar concerns. A full description of the classroom atmosphere study procedure is given in Section V. The aim of the study was to get some insight into classroom atmosphere in outer city, middle city, and inner city schools in addition to the WOIS. Thirty-two classrooms were studied by 16 observers. A checklist was used to rate certain behaviors and the data collected are presented in Table 21.

As Table 21 suggests, there appear to be very real differences between WOIS classrooms and those in other schools. What the data suggest is that WOIS children are given greater independence than in other schools. There is much less teacher/pupil interaction (less pupil dependence) in the WOIS than in other schools and WOIS is also rated less authoritarian than other schools (this difference is statistically significant). The classroom observation procedure was continued into the 1969-1970 school year.

Creativity

Three tests of creativity were used. They are described in Section V. A preliminary and pilot study reported in January 1969, showed that control children scored higher on the creativity measures than did the WOIS children, both in the number of responses and the number of unique responses. However, further study revealed that superiority of the control children in other schools was only apparent.

"Creativity" measures appear to be very much influenced by the ongoing activities interrupted by the test procedures. When children were temporarily removed from an "uninteresting" activity to which they had to return, they gave almost twice as many responses (or unique responses) than when they knew they would return to an "interesting" activity. This finding held equally true for boys and girls, for children at different age levels and for children from different ethnic groups (Elkind, et al, 1970). Since WOIS children can be regarded as engaged in more interesting activities than public school children, their participation in these activities could be expected to adversely affect their performance on creativity measures. The evaluation team believes this accounts for the discrepancy between the WOIS and public school children.

Table 17

Results of Achievement Testing
1968-1969

PUPIL AGE GROUP	TEST	MEDIAN GRADE EQUIVALENT
Age 6	Metropolitan Achievement Test Primary I Battery	
	Word Knowledge	2.7 *
	Word Discrimination	3.1 *
	Reading	3.0 *
	Arithmetic	2.5 *
Age 7	Metropolitan Achievement Test Primary II Battery	
	Word Knowledge	5.0 *
	Word Discrimination	5.1 *
	Reading	4.5 *
	Spelling	4.5 *
	Language	3.9 *
	Arithmetic Computation	4.1 *
	Arithmetic Concepts and Problem Solving	4.3 *
Age 8	Metropolitan Achievement Test Elementary Battery	
	Word Knowledge	5.0 *
	Word Discrimination	5.3 *
	Reading	4.3 *
	Spelling	4.9 *
	Language	4.2 *
	Arithmetic Computation	4.1 *
	Arithmetic Concepts and Problem Solving	4.6 *
Age 9	Metropolitan Achievement Test Elementary Battery	
	Word Knowledge	5.0 *
	Word Discrimination	5.1 *
	Reading	4.6 *
	Spelling	4.1
	Language	4.2
	Arithmetic Computation	3.9
	Arithmetic Concepts and Problem Solving	4.0

* indicates median grade equivalent above test norms

This data was collected by the Rochester School District which at the time, calculated median scores

Table 17
(cont'd)

Results of Achievement Testing
1968-1969

PUPIL AGE GROUP	TEST	MEDIAN GRADE EQUIVALENT
Age 10	Metropolitan Achievement Test Intermediate Battery	
	Word Knowledge	6.5 *
	Reading	8.0 *
	Spelling	6.0 *
	Language	6.5 *
	Language Study Skills	6.4 *
	Arithmetic Computation	5.0
	Arithmetic Concepts and Problem Solving	4.8
	Social Studies Information	6.6 *
	Social Studies Skills	6.8 *
	Science	6.6 *
Age 11	Metropolitan Achievement Test Intermediate Battery	
	Word Knowledge	7.4 *
	Reading	7.1 *
	Spelling	7.3 *
	Language	6.3
	Language Study Skills	7.0 *
	Arithmetic Computation	5.9
	Arithmetic Concepts and Problem Solving	6.1
	Social Studies Information	7.3 *
	Social Studies Skills	6.6
	Science	7.0 *

* indicates median grade equivalent above test norms

Mean Separation Distances (in inches) for Two Schools and for Three Stimulus Pairs
1968-1969

	SCHOOL	
PAIR	WOIS	MC
Black/black	4.38	5.79
White/white	4.22	6.09
Black/white	5.50	5.52

Mean Separation Distances (in inches) for Blacks at Two Schools and for Three Stimulus Pairs

	SCHOOL	
PAIR	WOIS	MC
Black/black	4.77	4.67
White/white	3.97	5.31
Black/white	6.98	5.69

Mean Separation Distance (in inches) for Whites at Two Schools and for Three Stimulus Pairs

	SCHOOL	
PAIR	WOIS	MC
Black/black	4.24	7.01
White/white	4.29	6.57
Black/white	4.87	5.45

Table 19

Percent of Children at Four Age Levels Who Checked Negative Adjectives About Themselves 1968-1969

No. of Negative Adjectives Checked	Age Group			
	5-6	7-8	9-10	11-12
0-5	70.4	76.5	70.3	60.0
6-11	26.0	18.5	27.9	26.7
12-20	3.7	5.3	2.7	13.3

Table 20

Percent of Puerto Rican (PR), Black (B) and White (W) Children Who Checked Negative Adjectives About Themselves 1968-1969

No. of Negative Adjectives Checked	PR (N=6)	B (N=41)	W (N=82)
0-5	66.7	73.3	68.4
6-11	16.7	24.5	25.7
12-20	16.7	2.5	6.2

Table 21

Results of Classroom Atmosphere Ratings for Four Schools and Six Categories 1968-1969

Mean Number of Teacher Initiated Interactions

*OC	19
*MC	17
*IC	13
*WOIS	7

Mean Number of Child Initiated Interactions

OC	8
MC	10
IC	5
WOIS	6

Mean Number of Positive Verbalizations (by teacher)

OC	5
MC	3
IC	3
WOIS	3

Mean Number of Negative Verbalizations (by teacher)

OC	6
MC	5
IC	8
WOIS	2

Mean Number for Encouragement - Discouragement of Discussion

(Scale of 1 to 5, with low number indicating greater encouragement)

OC	2.41
MC	2.24
IC	3.5
WOIS	1.84

	Authoritarian	Laissez Faire	Democratic
OC	50%	16%	34%
MC	31%	38%	31%
IC	64%	13%	23%
WOIS	7%	44%	48%

*OC - Outer City
*MC - Middle City
*IC - Inner City
*WOIS- World of Inquiry

FALL 1968

Measures

1) Creativity (1) *
2) Social Attitude

Subjects

30 WOIS matched with 30 children from waiting list (cnt). Data based on 24 matched children.

Results

1) Control children had higher creativity scores ** (See Elkind, et al, 1970)
2) no statistical difference between WOIS and control group

SPRING 1969

Measures

1) Self Concept
2) Social Distance (1) *
3) Classroom Atmosphere

Subjects

1) 132 WOIS, K-6
2) 20 WOIS, 20 middle city children
3) 4 schools, WOIS, IC, MC, OC

Results

1) no statistical difference for age or race among WOIS children
2) no statistical difference between the 20 WOIS and the 20 middle city children.
3) WOIS rated as less authoritarian

* numbers indicate form of measure used. For further details, see Section V.
** Statistically significant

1969-1970

The following is a summary and interpretation of testing done in WOIS for the school year 1969-1970. The first section briefly presents academic test findings. The second section describes the results of attitudinal, preference and personality testing on two groups of children. One group was taken from the WOIS population. The basis of selection was that all of their school experience was in this school (see page 67 for a more detailed description of the matching procedure). The other group consisted of children from the waiting list of the school, who were matched with WOIS children on a number of variables that will be discussed later.

Academic Achievement

Achievement Testing

The performance of the children at WOIS on standardized achievement tests was above national norms as it was for the years 1967-1968 and 1968-1969. The mean percentile for WOIS children tested in the 1969-1970 school year was 58.93. There was no significant mean change for the same children tested in two consecutive years.

Non-Academic Measures

Six tests to evaluate non-academic social aspects were individually administered to 33 second and third grade children from the WOIS and 33 second and third grade children selected from the WOIS waiting list. The children were matched insofar as possible, for age, sex, socioeconomic status, family background and school achievement, as described on pages 67 and 68. The tests were given in two individual sessions which lasted from 15 to 30 minutes. (Of necessity, each child was tested individually.) During the first session, a Need Achievement measure, a Social Distance Test, and a Pupil Attitude Scale were administered. This first session of testing took place during the late fall and early winter of the 1969-1970 school year. During the second testing session, which took place during the late winter and early spring of the same year, a Test Anxiety Scale, a Self Concept measure and a Test of Creativity were administered. All of the above measures are described in Section V.

The testing was carried out in the above manner for a number of reasons. First of all, administration of all six tests during a single session would have been too long and would have tired children and deadened their interest. The tests were grouped so as to provide a variety of verbal and non-verbal activities at each sitting. As it was, the geographical separation of the control group children made even two testing sessions a time consuming proposition, but it was done to maximize the reliability and validity of the testing.

In addition to the non-academic tests given to the WOIS and control children, one other evaluative procedure was used with a larger population. This evaluative procedure consisted of an assessment of "classroom atmosphere" in the WOIS as well as in representative inner city, middle city, outer city and suburban schools.

Social Distance

As described in Section V, the Social Distance Scale involved the use of black and white dolls in conjunction with a questioning procedure. The children were required to place the dolls in various positions relative to each other. Results of the social distance testing are shown in Tables 22, 23, 24, and 25. Table 22 shows the number of children who chose BB, BW, and WW combinations for WOIS and control groups for three age levels. As indicated in Table 22, there were no significant differences between WOIS and control groups in frequency or order of choice of BB, BW, and WW figures.

Table 23 shows the mean distance between pairs for the WOIS and control groups for BB, BW, and WW pairs and second and third graders within each group. At the second grade level the WOIS group placed the BW pair significantly farther apart than is true for second grade control group children. As shown in Table 24, this holds for the WOIS and control groups taken as a whole. Finally, Table 25 shows that there were no significant differences between boys and girls within or between the WOIS and control groups with respect to the separation distances for BB, BW, and WW pairs.

Creativity

The Creativity Test that was constructed for this evaluation by one of the evaluation team (Jerome Meyer) is described in Section V. As can be seen in Table 26, there were no significant differences between the WOIS and control groups with respect to their mean creativity scores.

Pupil Attitudes

A Pupil Attitude Scale was devised which assessed children's associations to school related words. This scale is described more fully in Section V. The responses were scored on a 5 point scale so that a higher score indicated a more positive attitude. The total score thus reflected the child's overall tendency to associate positive words to school related items.

The results for the Pupil Attitude Scale are presented in Table 27. As shown in that table, the attitude of both groups toward school became more negative with increasing age. Interestingly enough, WOIS boys were significantly more positive towards school than either the control girls or boys. This is unusual because boys are generally more negative towards school than girls. These results suggest that WOIS boys may feel differently towards school than boys in other school settings.

Test Anxiety

This Scale was taken from Sarason (1960). It was administered by reading the Sarason questionnaire to 33 WOIS and 33 control children. (A copy of the test is provided in Section V). Some of the questions concerned anxiety about school, and some concerned anxiety about tests. As the results in Table 28 show, there was no significant difference between the WOIS and control group with respect to their level of test anxiety.

Self Concept

The same self concept measure as described in Section V and mentioned in the evaluation for 1968-69 was given to the WOIS children and to the control group. Table 29 shows that the control group children tended to describe themselves in a more positive light than did the WOIS children. The difference was, however, not statistically significant. Nonetheless,the trend did seem strong enough to explore it in a little more detail. First of all, this was the second time the WOIS children were given the test and there seemed to be a general downward trend in self concept scores between the first and second testings. This is shown in Tables 30 and 31. The second time children seemed to describe themselves less positively than the first time they were exposed to the test.

Of additional interest is the material presented in Table 32 and which shows the correlation between Test Anxiety and Self Concept scores. Although there was a significant relation between self concept and anxiety in the control group, no such relationship was found for the WOIS children. This suggests a hypothesis that requires further testing; namely, that children who present themselves in the most positive light do so defensively, and are more anxious than children who can accept the less positive features of their behavior and appearance.

Classroom Atmosphere

Eight classrooms in four schools (an inner city, middle city, outer city and suburban) as well as the WOIS were visited on three separate occasions. Each classroom was independently rated by two observers. There were 20 observers in all, four to each school. The observers were interested in several aspects of the classroom situation having to do with teacher and child interactions such as the relative amount of teacher-initiated activity as compared to child-initiated activity and the like. The results of classroom atmosphere ratings for five schools and seven categories are given in Table 33.

The results are similar to those found in the pilot study of 1968-1969. As in that study, WOIS teachers were found to be the most democratic and among the most supportive. WOIS teachers were also least directive of pupil activity and the most encouraging of self initiated activity. This, of course, was to be expected and suggests that WOIS teachers were putting into practice the philosophy of education set forth in the schools aims and objectives.

Matching Procedure

As of September 1969, 35 children could be identified as having started their school experience (K or 1st grade) at the World of Inquiry and as having been in continuous attendance for the 2 years the school existed.

Data processing cards were made up on each of these children listing their names, address, birthdate, home school, sex, race, geographic location,[1] and economic level.[2]

Potential control children were all the second and third grade age children on the waiting list -- new applicants were added in the fall of 1969. This group consisted of 221 children.

Despite the small bank of controls, 15 children were matched on all variables, and 15 were matched on all but one variable, 11 of these were mismatched on sex, 2 were not matched on race and 2 not on income, of the 3 mismatched on 2 variables, 2 were not matched on sex and race, and the remaining one was not matched on geographic location of their schools (Middle City, WOIS, as opposed to Outer City - control and level 2 economic level - WOIS and level 3 - control).

The 33 control children attended 26 schools in Monroe County. The schools were distributed as follows:

6 schools were Inner city public schools

5 schools were Middle city public schools

6 schools were Outer city public schools

---

[1] Geographic location was decided by categorization of the neighborhood school which the child would have attended as determined by his address as Inner, Middle, Outer, Suburban, (WOIS list).

[2] Four levels set by the WOIS for admittance: Level 1 = 0 - $4,999; 2 = $5,000 - $9,999; 3 = $10,000 - $14,999; 4 = $15,000 +.

4 schools were Suburban public schools

3 schools were Parochial schools (one in an Inner City area, one in the Outer city and one in suburbia)

2 were private schools

All children were tested on two separate occasions 3 or 4 months apart.

Table 22

Social Distance
1969-1970
Number of Children in WOIS and Control Groups who Chose
BB, BW, and WW Combinations on 1st, 2nd and 3rd Trials

	Group					
	WOIS			Control		
	BB	BW	WW	BB	BW	WW
Trial 1	2	7	24	4	5	24
Trial 2	5	10	18	9	17	7
Trial 3	9	10	14	14	6	13
Total	16	27	56	27	28	44

Table 23

Social Distance
1969-1970
Mean Distances Between Figures for Two Grade Levels and Two Groups
WOIS and control

	Grade 2			Grade 3		
	WOIS Group n = 18	difference	Control Group n = 18	WOIS Group n = 17	difference	Contro Group n = 1
BB	$\bar{X} = 2.376$	.786	$\bar{X} = 3.162$	$\bar{X} = 9.765$	5.545	$\bar{X} = 4.2$
BW	$\bar{X} = 6.637$	3.035*	$\bar{X} = 3.602$	$\bar{X} = 4.886$	1.075	$\bar{X} = 3.8$
WW	$\bar{X} = 4.436$	.360	$\bar{X} = 4.798$	$\bar{X} = 2.774$	.188	$\bar{X} = 2.9$

*t significant at the .05 level.

Table 24

Social Distance
1969-1970
Mean Distances Between Figures for
Two Groups and for Three Pairs

	WOIS Group (n = 35)	difference	Control Group (n = 35)
BB	$\bar{X}$ = 6.722	1.751	$\bar{X}$ = 4.971
BW	$\bar{X}$ = 5.895	2.178*	$\bar{X}$ = 3.717
WW	$\bar{X}$ = 3.520	.455	$\bar{X}$ = 3.975

*Significant at .05 level.

Table 25

Social Distance
1969-1970
Mean Distances Between Figures Chosen
by Boys and Girls for Two Groups and Three Pairs

	Males			Females		
	WOIS Group n = 19	difference	Control Group n = 18	WOIS Group n = 16	difference	Cont Gr n
BB	$\bar{X} = 6.260$	2.760	$\bar{X} = 3.500$	$\bar{X} = 7.133$	3.440	$\bar{X} =$
BW	$\bar{X} = 5.975$	1.980	$\bar{X} = 3.995$	$\bar{X} = 5.807$	2.206	$\bar{X} =$
WW	$\bar{X} = 4.178$	.300	$\bar{X} = 4.478$	$\bar{X} = 2.444$	.913	$\bar{X} =$

Table 26

Mean Creativity Scores for WOIS and Control Groups and for Female and Male Subjects 1969-1970

WOIS Group

2nd M:* T = 173
N = 9
$\bar{X}$ = 19.222

2nd F: T = 270
N = 9
$\bar{X}$ = 30.000

3rd M: T = 266
N = 9
$\bar{X}$ = 29.555

3rd F: T = 214
N = 6
$\bar{X}$ = 35.666

Control Group

2nd M: T = 137
N = 9
$\bar{X}$ = 15.222

2nd F: T = 192
N = 9
$\bar{X}$ = 21.333

3rd M: T = 268
N = 9
$\bar{X}$ = 29.777

3rd F: T = 232
N = 6
$\bar{X}$ = 38.666

M_W: T = 439
N = 18
$\bar{X}$ = 24.388

F_W: T = 484
N = 15
$\bar{X}$ = 32.266

M_C: T = 405
N = 18
$\bar{X}$ = 22.500

F_C: T = 424
N = 15
$\bar{X}$ = 28.266

* 2nd M = 2nd grade males
3rd M = 3rd grade males
2nd F = 2nd grade females
3rd F = 3rd grade females

M_W = WOIS males
M_C = Control males
F_W = WOIS females
F_C = Control females

Table 27

Mean Pupil Attitude Scores for WOIS and Control Groups For 2 Grade Levels and for Males and Females

1969-1970

GROUP

WOIS		CONTROL	
Grade 2 N=18	Grade 3 N=15	Grade 2 N=18	Grade 3 N=15
33.44	32.40	32.83	30.866
TOTAL 32.97		TOTAL 31.94	

WOIS		CONTROL	
Males N=18	Females N=15	Males N=18	Females N=15
33.44*	32.40	31.00	33.07

* t = 2.352 significant at the .05 level

Table 28

Mean Test Anxiety Scores* for WOIS and Control Groups

1969-1970

GROUP	
WOIS	CONTROL
70.39	70.79

*percent of total anxiety items agreed to

Table 29

Percent of Positive Self Adjectives Checked by WOIS and Control Groups

1969-1970

WOIS	CONTROL
88.80	92.30

t = 1.445

Table 30

Percent of Positive Self Descriptions by WOIS Group on First and Second Testing

1969-1970

FIRST TESTING (Spring 1969)	SECOND TESTING (Spring 1970)
90.80	88.8

t = .634

Table 31

Percent of Positive Self Descriptions by New WOIS Children in the Fall of 1969 and on a Second Testing in the Spring of 1970

(number = 99)

1969-1970

FIRST TESTING (Fall 1969)	SECOND TESTING (Spring 1970)
92.2	88.0

t = -2.849*

* Significant at .05 level

Table 32

Correlation Between Test Anxiety and Self Concept

1969-1970

WOIS GROUP

Self Concept (%)	Test Anxiety (%)
T = 2930.0	T = 2339.0
N = 33	N = 33
$\overline{X}$ = 88.79%	$\overline{X}$ = 70.9%

r = t.113

CONTROL GROUP

Self Concept (%)	Test Anxiety (%)
T = 3045.0	T = 2318.9
N = 33	N = 33
$\overline{X}$ = 92.27%	$\overline{X}$ = 70.3%

r = +.445*

---

* significant at .05 level

[illegible] of Classroom [illegible] for Five Schools and
Seven Categories (each school was observed on 3 separate occasions)
1969-1970

	World of Inquiry	Surburban	Middle City	Inner City
Mean Difference of Teacher minus child initiated interactions. (All schools had more teacher-initiated than child-initiated interactions. The least difference seems to imply more two-way communication rather than one-sided communication)	2.239	3.310	4.125	7.688
Mean Number of Teacher Initiated Interactions	9.304	13.024	11.771	14.271
Mean Number of Child Initiated Interactions	7.065	9.714	7.646	6.583
Mean Difference of Positive Minus Negative Verbalizations	2.391	1.750	.614	.375
Mean Number of Positive Verbalizations (by teacher)	4.043	4.417	3.523	2.354
Mean Number of Negative Verbalizations (by teacher)	1.652	2.667	2.909	1.979
Order of Most to Least Individual Movement (leaving and entering the classroom) (This does not measure whole class movement which is on the increase in many schools)	LEAVE 5.826 ENTER 6.913	LEAVE 2.095 ENTER 4.625	LEAVE 1.261 ENTER 1.522	LEAVE .979 ENTER 1.67
Mean Number of Interactions between Children (The WOIS is the only school where we know for sure this activity is encouraged)	17.452	15.783	13.792	13.125
Mean Number of Children Not Paying Attention in Class	.652	1.845	1.875	2.196

Table 33 (cont'd)
1969-1970

	Percentages of Teachers Considered		
	Democratic	Authoritarian	Laizzez Faire
World of Inquiry	47.7%	26.15%	26.15%
Suburban	44.0%	44.0%	12.0%
Outer City	36.8%	52.6%	10.5%
Middle City	30.5%	57.6%	11.9%
Inner City	27.8%	53.7%	18.5%

	Mean Number for Encouragement - Discouragement of Discussion Encourage 1 2 3 4 5 Discourage
World of Inquiry	2.022
Suburban	2.5
Outer City	2.727
Middle City	2.781
Inner City	2.896

SCHOOL YEAR
1969-1970

Measures

1) Self Concept
2) Creativity (2) *
3) Need Achievement
4) Social Distance (1) *
5) Pupil Attitude (1)
6) Test Anxiety Scale
7) Classroom Atmosphere

Subjects

1 through 6 33 second and third grade WOIS children matched with 33 second and third grade children from the waiting list.
7) 5 schools, WOIS, IC, MC, OC, and suburban

Results

1) no significant difference between WOIS children and controls
2) no significant difference between WOIS children and controls
3) no significant difference between WOIS children and controls
4) no significant difference in frequency or order of choice. WOIS second grade children placed BW pairs farther apart than second grade control children.**
5) WOIS boys more positive towards school.**
6) no significant difference between WOIS children and controls
7) WOIS teachers more democratic and supportive, least directive and most encouraging of self-initiated activity than teachers in comparison schools. **

Comments

The correlation between anxiety and self concept scores was significant for control children but not for WOIS children.

* numbers indicate form of measure used. For further details, see Section V.
** significant at .05 level

1970-1971

The evaluation of WOIS for the school year 1970-1971 because of funding, was delayed and the evaluation team had to use its own limited financial resources to bridge the funding gap.

Academic Achievement

Achievement Testing

As far as academic achievement on the part of WOIS was concerned, the student body, as a whole, was performing significantly above the national norms on standardized achievement tests. Their national norm percentile standing was 59.54 on all tests, and 59.75 on verbal tests alone. In addition, when the same children were tested in two consecutive years, there was no significant increase or decrease in achievement scores and there was a mean change of less than 1% for all achievement test data.

Non-Academic Measures

In 1969-1970, 33 WOIS children, who had all of their formal schooling at WOIS were matched with a comparable group of children who were on the waiting list but who were in the public schools (see Matching Procedure, pages 67 and 68). In the spring of 1971 as many of the children in each group as possible were located and tested on a limited battery of measures. Each child was tested individually and most testing was completed in one session. Due to expected factors of attrition (family mobility) the sample decreased to 24 children in each group. Some rematching within the group occured but there were no gross mismatches.

The following measures were administered to both groups: Self Concept, Test Anxiety (with an embedded lie scale), and the Wide Range Achievement Test. As the results in Table 35 show, the two groups remained comparable not only with regard to non-academic factors but also with respect to academic achievement. There were, in effect, no significant differences between the two groups on any of the measures employed. Table 36 shows the various intercorrelations for the tests administered during this evaluation period.

To assess possible differential success of WOIS children from different ethnic backgrounds, both the controls and WOIS group were divided into subgroups of black, white and total non-white (including Spanish speaking and Oriental) children. The test performance means of these various groups are shown in Table 37. Results in Table 37 suggest that white WOIS children performed somewhat higher than white control children in reading and arithmetic, but that the two groups were roughly comparable on the other measures used. The reverse seemed to hold true for black WOIS students, who did somewhat poorer on the reading, spelling, and arithmetic achievement tests than did their controls in the public schools. The non-white WOIS children did not differ significantly from their non-white controls in the public schools. On the surface, the results from this year did not overwhelmingly support the hypothesis that WOIS experience had more beneficial academic and non-academic effects upon children than did public school experience. However, it is difficult to draw any conclusions from these data because of the limited testing conducted.

The lack of differences between the matched groups may mean that such factors as parental aspirations and home environment are playing a major role in performance. Although home environment is probably important, other hypotheses to account for the finding of no difference between WOIS and control children should be considered. Perhaps the WOIS students improved in areas of independence and responsibility that were not assessed in the evaluation. If this was true and WOIS children still managed to keep up academically with children in the public schools, then this would be a significant finding. Breadth of development rather than speed of development, in the long run, might be the most significant factor in success as an adult.

Very little time had been devoted to validation and refinement of measures used in the previous yearly evaluations. This was a result of necessity rather than of design. During the Summer of 1971, the evaluation team conducted a research day camp in order to deal with this aspect of the evaluation. The camp offered parents a free, one week day camp for their children and in return they permitted their children to be tested. The population was drawn from the Rochester inner city and suburbs. Each week a mixed age group of children ranging from 4 to 9, participated in the camp. The camp ran for eight weeks an average of 15 children attended each week so that a sample of more than 100 children was obtained over the whole period. Children of the appropriate age level were given tests such as the Pupil Attitude, Self Concept, Creativity and Social Distance Scale. The students and staff working with children also filled out an adjective checklist on each child at the end of the week. This adjective checklist was then used to validate the information gained by the tests. Statistical analysis of these data was then carried out.

Results showed that the self concept was an internally consistent test that correlated well with the ratings of the observers. There was no significant relation of any of the self concept items to age, sex, or race. A high self concept score correlated negatively with anxiety as measured by the Test Anxiety scale ($r = -.3862$). A high self concept score also correlated negatively with creativity as measured by the Creativity scale ($r = -.3060$). The Pupil Attitude Scale had no internal consistency and this version was eliminated in future evaluations. No definite conclusions were reached regarding the creativity test and further research on this measure was planned. The Social Distance measure was modified and it was decided that the test would be more effective if more realistic dolls were employed. As a result of the summer work, it was possible to eliminate some of the ambiguities and to refine the measures constructed by the evaluation team. In addition, the team reviewed the research literature in an attempt to find additional measures appropriate for the evaluation.

During the summer, a statistical progarm was undertaken to convert all achievement data collected over the previous years into percentile scores. This program was not an ideal solution to the problem, but all other methods proved to be unsuccessful. Once this decision was made, it meant that academic achievement comparisons of WOIS children with children in attendance in Rochester City Schools would be almost meaningless. Accordingly, thereafter, academic achievement of WOIS children was always compared to national norms and not to City School District results.

Table 34

Change in Achievement Level of Individual WCIS Children
for 1969-1970 and 1970-1971

ALL DATA			VERBAL DATA		
n	mean change	t	n	mean change	t
122	-0.77	-0.41	122	-1.74	-0.98

Table 35

Means and Standard Deviations of World of Inquiry and Control Children Spring 1971 Testing

(9-10 yr. old children)

Measure	World of Inquiry n=24		Control n=24	
	Mean	S.D.	Mean	SD
Self Concept (rw)	31.2	5.01	32.5	5.12
Anxiety Lie Scale	3.7	2.03	3.1	2.06
Test Anxiety	20.5	5.75	17.4	6.51
Wide Range Achievement				
Reading	71.0	36.70	69.2	32.10
Spelling	52.8	30.70	55.9	31.50
Arithmetic	56.5	30.00	47.3	19.50

Table 36

Correlations Among Measures in 1971 Testing;

WOIS (upper) & Control (lower)

	Anxiety Lie	Test Anxiety	Ach. Reading	Ach. Spelling	Ach. Arith.
Self Concept	0.30 -0.09	0.47 -0.29	-0.13 -0.02	0.10 -0.07	0.04 -0.08
Anxiety Lie	----	0.71 0.16	0.16 -0.21	0.28 -0.15	0.35 -0.39
Test Anxiety	----	----	0.38 0.18	0.50 0.39	0.53 0.28
Ach. Reading	----	----	----	0.88 0.83	0.78 0.70
Ach. Spelling	-----	----	----	----	0.73 0.74

Racial Subgroup Means
Spring 1971 Testing

Group	Self Concept	Anxiety Lie	Test Anxiety	Wide-Range Achievement Reading	Spelling	Arith.
W-I White	30.9	3.4	20.2	85.9	60.2	64.2
Control White	32.2	2.7	18.3	75.7	60.7	48.3
W-I Black	32.7	4.0	21.0	47.5	38.4	42.8
Control Black	33.6	4.0	16.3	63.0	51.0	47.4
W-I NonWhite	31.5	4.0	21.0	53.5	44.0	47.4
Control NonWhite	33.3	3.9	15.5	56.4	46.4	45.5

Non-Academic Measure Highlights

SPRING 1971

Measures

1) Self Concept
2) Test Anxiety with lie Scale

Subjects

1) and 2) 24 of the 33 matched children used in 1969-1970 evaluation. ☆

Results

1) no significant difference between WOIS and control groups
2) no significant difference between WOIS and control groups

Comments

☆ population decreased due to attrition

There were several different but closely related activities conducted by the WOIS evaluation team in this period. These involved the administration, scoring and tabulation of the academic achievement tests required by the city school system, the testing of 24 WOIS and 24 matched public school pupils on a variety of measures, and the locating, interviewing and testing of graduates of WOIS. In addition to these activities, there was an attempt to study classroom atmosphere and pupil activity in the classroom.

Academic Achievement

Achievement Testing

As mentioned before, one of the continual problems in dealing with achievement test data was the fact that the city schools gave different tests in successive years (see Section III for more specific information on achievement testing). In Table 38, the WOIS and national percentiles are given for the Stanford Achievement Test for 1971-1972. Although the WOIS population was superior to national norms in achievement during the first four years (see Table 15), the WOIS children's performance dropped to the national norm level in 1971-1972.

The change in percentile standing from one year to the next may be computed for any child tested in two consecutive years. Table 39 contains the results of such an analysis with appropriate t-tests. For the children who were tested both in 1970-1971 and 1971-1972 there was a highly significant average drop of about 8 percentile points from one year to the next. The analysis of change for the total period (1967-1972) of WOIS school existence, included all children tested in more than one year* and shows an average drop of about 25% or one quarter that of this year's drop (see Table 16). The data could hardly be clearer: the overall decline in achievement for the five years was almost entirely due to the decline during this 1971-1972 period.

The New York State Test provided further evidence that 1971-1972 was an unusual year for the WOIS. The percentile rank of median raw scores on the New York State Reading Test for the WOIS children in 1971 dropped from the 1969 testing period.** One possibility for the drop in achievement was the influx of a great many teaching interns during the 1971-1972 year which may have, for one reason or another, interferred with the academic achievement of the children. It should also be borne in mind that uncertainty as to the continuing existence of the WOIS during that time may have affected student and teacher morale. Although it is not clear exactly what happened in 1971, it is clear that it was an unusual year and that children's performance during that year probably did not accurately reflect the consequences of attendance at WOIS.

The Wide Range Achievement Test was administered in two separate years to WOIS and control groups consisting of 24 matched pairs of children. In both years the WOIS children had higher scores than the control children and the scores of both groups went down in 1971-1972. However, the differences and declines were not significant. The results are shown in Table 40.

*Each child's average yearly change is the slope of the best-fitting straight line to his average data for each year tested.

Non-Academic Measures

In the social domain, children were assessed on measures of Self Concept, Creativity, Anxiety, Need Achievement, Attitude Toward School and on an Interest Inventory. The results of these tests will be discussed in turn. (See Section V for a detailed description of these measures).

Self Concept

Table 41 presents the results of the Self Concept measure. There were no significant differences between the WOIS and control groups during two consecutive school years. Table 41 also indicates there were no significant differences when each group was compared to itself for the same time period.

Creativity

The Creativity measure was not administered to the WOIS and control groups during the 1970-1971 evaluation. However, differences are computed for the 1969-1970 period and the 1971-1972 period. Table 42 shows no significant differences between the groups for 1969-1970 but a significant difference for 1971-1972 in favor of the WOIS group. In addition, both groups have a significant increase in scores between the two tests. Part of this increase can be contributed to the measure itself. It is expected as the children get older their scores should shift upwards. However, this cannot account for the difference between groups, only the difference when comparing each group to itself. Table 42 clearly suggests that the children at WOIS advanced in creativity significantly more rapidly than the control children.

Test Anxiety

The Test Anxiety Scale was administered individually to each child. Table 43 provides the results of an overall analysis with the lie scale items separated out. There was a significant difference between the WOIS and the control group. The WOIS children showed a significantly lower level of test anxiety than did the controls. In addition, for the school year 1971-1972, there was a significant difference between the WOIS and control groups on the lie scale items. This difference was in favor of the WOIS children, who gave fewer lie scale responses.

Need Achievement

To test for need achievement, a modification of the McClelland Need Achievement Test was administered to both WOIS and control children. This measure was not given in 1970-1971. Inasmuch as administration and scoring procedures of this measure were changed from the 1969-1970 version of the tests, the performances in successive years were not comparable. Accordingly, only the current year need achievement data are considered. The results are shown in Table 44. As shown in Table 44, there was a significant difference between the groups. The control children scored significantly higher on need achievement than the WOIS children. It will be recalled that during this period (1971-1972) the achievement scores of the WOIS children also dropped significantly. Perhaps the two findings are related and the lowered achievement scores were a product of lowered achievement motivation.

Pupil Attitude

The Pupil Attitude Scale used in 1971-1972 was a revised version of the scale used in the previous evaluation. The results are presented in Table 45. There were no significant differences between the WOIS and control group on this measure. Since the scale was changed from the previous year, it was not possible to compute a change score for the two groups. More recent work on this scale suggests it was not an adequate measure of pupil attitude. For the 1972-1973 evaluation, therefore, a new pupil attitude measure was constructed. It will be described in Section V.

Breadth of Interest

One of the questions concerning the effects of the WOIS attendance had to do with the results of exposing children to a wide range of experiences over and above strictly academic ones. What sort of curricular and extra-curricular interests are to be found among WOIS youngsters? The results of a survey of children's interests are given in Table 46. As this table shows, WOIS children had a great many outside interests which were other than academic. Unfortunately, it was not possible to compare the breadth of interest of the WOIS children with a control group outside the school.

Pupil Activity

It has been suggested that WOIS students probably spend less time than public school students in formal academic work. Their roughly comparable academic achievement could then reflect the fact that at WOIS, children get more mileage out of academic work than in public school. The evaluation team attempted to explore this possibility by getting a rough determination of how much time WOIS and public school children spent in academic instruction. Pupil activities at WOIS and at four other Rochester schools were observed in a time sampling procedure. (See Section V for Classroom Atmosphere and Pupil Activity Scales). The results of this study are given in Table 47 that shows the percent of time spent on assigned work (teacher-directed) or on self selected activities. This table also shows the percent of time spend on reading and math by WOIS children and children in four other schools.

Classroom Atmosphere

A classroom atmosphere study was also conducted this year, utilizing the design used in the 1969-1970 evaluation. Unfortunately, observer reliability was so low it was not appropriate to report the data.

Attendance

It was thought useful to look at patterns of attendance of WOIS students as compared with other Rochester schools. Because of the more relaxed and happy atmosphere at WOIS, there was a general feeling that attendance would be better at WOIS than in more traditional schools. A 10 month survey was made of 1971-1972 attendance figures supplied by the Rochester School District. It was found that WOIS did, indeed, have better attendance figures than the average of all Rochester elementary schools for 8 of 10 months observed. Table 64 illustrates this finding.

Follow up of Graduates

Twenty nine children who had graduated from the WOIS and who were attending junior high or high school in the Rochester area were located. These children were interviewed with a special questionnaire and the quantitative results are shown in Table 49. As the results in Table 49 indicate, most graduates of WOIS had positive memories of their experience at the school and recommended it for other young people.

Table 50 gives the results of the achievement and personality testing for the WOIS graduates. For both the academic and the personality measures, the results were not particularly striking and the group as a whole, was about at grade level in reading but a little behind in spelling and arithmetic. This pattern coincides well with the pattern found for children as a whole in a broad survey of New York public schools. The pupil attitude, self concept measures and anxiety scores of the graduates were also in the average range. WOIS graduates were no more, nor no less positive about school, positive about themselves or anxious than the norm groups upon whom these tests were validated.

Again, it is hard to interpret these data. It could be that WOIS experience has no immediate or lasting beneficial effects vis a vis the public schools. It could also be that most of these graduates had too short an exposure for the WOIS to have had any lasting effect. Unfortunately, it was not possible to test for creativity, on the Meyer Creativity Test on which WOIS children consistently scored higher than children in the public schools. a long term, comprehensive follow-up of WOIS graduates is the only way to truly assess the lasting effects of attendance at this school.

Table 38

Mean National Norm Percentiles on Stanford Achievement Tests
WOIS Children

1971-1972

VERBAL DATA ONLY

%	N
50.82	180

Table 39

Change in Achievement Level of Individual
WOIS Children for 1970-1971 and 1971-1972

VERBAL DATA ONLY

N	mean change	t
121	-7.64	-5.43*

* P .001

Table 40

Mean Wide Range Achievement Scores
n=23 pairs

READING SCORE

YEAR	WORLD OF INQUIRY	CONTROL	DIFFERENCE
1970-1971	71.00	69.20	+ 1.80
1971-1972	71.65	64.09	+ 7.56
1970-1972 (growth score)	+0.65	-5.11	
SPELLING SCORE			
1970-1971	52.80	55.90	- 3.10
1971-1972	50.74	47.74	+ 3.00
1970-1972	-2.06	-8.16	
ARITHMETIC SCORE			
1970-1971	56.50	47.30	+ 9.20
1971-1972	49.48	41.26	+ 8.22
1970-1972	-7.02	-6.04	

A + sign in the difference column indicates a difference in favor of the World of Inquiry School

A - sign in the difference column indicates a difference in favor of the control group

23 matched pairs, 1 pair taken out of this analysis because of invalid testing

Table 41

Mean Self Concept Scores
n=24 pairs

YEAR	WORLD OF INQUIRY	CONTROL	DIFFERENCE
1970-1971	31.21	32.54	-1.33
1971-1972	33.04	33.08	-0.04
1970-1972	+1.83	+0.54	

A higher score indicates a better self concept

A + sign in the difference column indicates a difference in favor of the World of Inquiry School

A - sign in the difference column indicates a difference in favor of the control group.

(this applies to Tables 42 through 45)

Table 42
Mean Creativity Scores
n=24

YEAR	WORLD OF INQUIRY	CONTROL	DIFFERENCE
1969-70	21.33	19.20	+ 2.13
1971-72	48.96	36.50	+12.46*
1969-72 (growth score)	+ 29.63**	+17.30**	

* P .05
** P .01

Table 43

Mean Test Anxiety Scores
n=24 pairs

YEAR	WOIS	CONTROL	DIFFERENCE
1971-1972	13.92	20.58	+ 7.66 **

Mean Lie Scale Scores
n=24 pairs

YEAR	WOIS	CONTROL	DIFFERENCE
1971-1972	6.58	7.91	+ 1.33 *

* P .05
** P .01

Table 44
Mean Need Achievement Scores
n=24 pairs

YEAR	WORLD OF INQUIRY	CONTROL	DIFFERENCE
1971-72	68.33	70.87	-2.54*

* P .05

Table 45
Mean Pupil Attitude Scale
n=24 pairs

YEAR	WORLD OF INQUIRY	CONTROL	DIFFERENCE
1971-72	6.21	7.04	- .83

Interest Categories of World of Inquiry Children
By Age

(In per cent)

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	Age 8		Age 9		Age 10		Age 11		Age 12	
	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School
1. Music										
a. Do you play	25%	44%	42%	67%	21%	50%	32%	54%	00%	50%
b. Do you take lessons	31%	19%	33%	25%	29%	33%	36%	23%	00%	25%
2. Arts & Crafts	86%	44%	92%	100%	88%	75%	95%	73%	75%	50%
3. Sports	81%	81%	88%	100%	92%	100%	95%	100%	100%	100%
4. Hobbies	81%	94%	96%	96%	92%	100%	73%	100%	100%	100%
5. Clubs	56%	94%	42%	79%	38%	79%	45%	73%	75%	50%

Table 47

Proportional Analysis of Amount of Time in Teacher-Directed and Pupil-Directed Activities

	WOIS	SUBURB	IC	MC	OC
Assigned Work	13.6	59.3	73.7	66.3	82.5
Optional Activities	79.2	39.3	25.7	33.5	13.3

Proportional Analysis of Amount of Time Spent on Academic Subjects

	WOIS	SUBURB	IC	MC	OC
Reading	24.8	44.5	22.1	54.4	62.9
Math	12.0	7.8	42.9	9.8	16.1

Table 48

Percent of Total Enrollment in Daily Attendance

	TOTAL ROCHESTER ELEMENTARY SCHOOLS	WOIS	SCHOOL WITH POOREST ATTENDANCE	SCHOOL WITH BEST ATTENDANCE
1971				
October	93.26	92.31 (-1.0)	88.83	96.50
November	92.99	92.65 (-0.3)	90.03	95.91
December	91.08	92.36 (+1.2)	87.29	94.74
January	87.81	90.04 (+2.2)	83.30	92.42
March	90.83	93.36 (+2.5)	86.51	94.28
April	90.98	92.50 (+1.5)	86.97	94.09
May	91.13	93.29 (+2.1)	87.14	94.49
June	90.40	92.24 (+1.9)	85.67	94.87
1972				
October	94.53	96.42 (+1.9)	91.46	96.73
November	92.88	95.78 (+3.0)	89.46	96.07

Table 49

Results of Questionnaire Given to WOIS Graduates

n=29

1. What did you like most about the World of Inquiry School?

Interest Area - 11
Freedom - 9
Work at own Rate - 5
Other - 4

2. What did you like least about the W.I.S.?

Nothing - 17
Teachers - 5
Lack of structure/ didn't learn - 5
Other - 2

3. Did you find it difficult to return to a regular school program after leaving the WOIS?

Yes - 11
No - 18

4. Do you think you benefited by your experience at the WOIS? In what way?

Yes - 25
No - 4

5. Would you recommend that other children go to the WOIS?

Yes - 23
No - 4
Depends - 2

7. Is there anything in particular you would like to change about the WOIS?

Yes - 8
No - 21   5 out of 8 children who wanted change suggested more structure

8. Did you find it difficult to adjust to the WOIS system when you first entered the school?

Yes - 6
No - 23

9. In your opinion, do you feel you did better academically at the WOIS than you did in your previous school?

Yes - 19
No - 10

Table 49
(cont'd)

Results of Questionnaire Given to
WOIS Graduates
n=29

10. Was your teacher easily accessible at the WOIS?

Yes	- 24
No	- 2
Sometimes	- 3

a. Two young people who said they benefited from WOIS wouldn't recommend it for other children.

b. Three young people who didn't want to make any changes at WOIS wouldn't recommend it for other children.

c. Eight young people who said they didn't do better academically at WOIS recommended it for other children and suggested no changes.

d. Two young people said they didn't learn enough at WOIS, but that they liked the freedom at the WOIS the best of all of its special features.

Table 50

Results of Wide Range Achievement Test
for WOIS Graduates
N=24

	Reading	Spelling	Arithmetic
Mean Grade Level	7.4	6.3	5.4

Mean age = 12.7

Results of Social Measures
for WOIS Graduates
N=24

	Pupil Attitude	Self Concept	Anxiety Scale
Mean	6.00	30.36	19.14

Non-Academic Measure Highlights

SCHOOL YEAR
1971-1972

Measures

1) Self Concept
2) Test Anxiety Scale
3) Creativity
4) Need Achievement
5) Pupil Attitude (2) *
6) Social Distance
7) Interest Inventory
8) Classroom Atmosphere
9) Pupil Activity Scale

10) Self Concept
11) Test Anxiety
12) Pupil Attitude
13) Questionnaire

Subjects

1) through 6) 24 WOIS matched with 24 waiting list children
7) WOIS children 8 years and older
8) 4 schools, WOIS, IC, MC, OC☆
9) 5 schools, WOIS, IC, MC, OC, and suburban

10) through 12) 24 WOIS graduates (5 graduates did not complete testing)
13) 29 WOIS graduates

Results

1) no significant difference between WOIS and control children
2) WOIS children had a lower level of anxiety than control children**
3) WOIS children had a higher creativity score than control children**
4) control children had a higher need achievement score than WOIS children**
5) no significant difference between WOIS and control children
6) no significant difference for distance, choice or direction
7) no comparison group
8) no reliability
9)
10) no comparison group
11) no comparison group
12) no comparison group
13) graduate, majority favorable WOIS experience

Comments

☆ rater reliability low. We considered the data collected questionable

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* numbers indicate form of measure used. For further details, see Section V.

** statistically significant

1972-1973

In previous years, the small size of the samples made it difficult to ascertain whether there were any modest differences between WOIS and control children in the direction sought by the school. At a meeting with National Science Foundation (NSF) personnel, a new design was chosen that might provide a better picture of the effects of the WOIS upon its pupils. Three groups of subjects were selected. One group (EX_1) were children who had been in attendance at the WOIS for more than one year. Another group, (EX_2) were in attendance at the WOIS for less than one year. A third control (Cnt) group consisted of children who were not in attendance at the WOIS, but who were on the waiting list for the school and who were roughly comparable to the WOIS children in age, sex and race. Table 51 shows the number of children in each group and in each of the various sub categories. Table 52 shows the geographical breakdown of the groups. All subjects were tested on a battery of tests which included the following:

1) Stanford Achievement Test
2) Interest Inventory
3) Otis Quick Scoring Mental Ability Test
4) Creativity Test
5) Self Concept
6) Attitude Toward Teacher
7) Attitude Toward School

With the exception of the Stanford Achievement Tests (which were given in the spring of 1973 as group tests) all of the tests were administered as a test battery to both WOIS and control subjects. Because of the number of tests, each subject was seen as least twice. The testing of both WOIS and control subjects was spaced throughout the whole of the 1972-1973 academic year.

Two studies were conducted this year on larger populations. A social distance measure was administered to 48 children in each of four separate schools, WOIS, IC, MC, OC. There were an equal number of black and white and male and female subjects with a mean age of 10. There were no significant differences between the schools for distance choice or direction measurements. In addition, a self concept reliability study was conducted with a larger population and this is included in the Self Concept section which follows.

Academic Achievement

Achievement Testing

In 1972-1973, the WOIS children scored significantly higher in verbal achievement than the national norms (Table 53). There was also a significant increase in achievement over the year before when WOIS children were performing at the national norm level. Table 54 shows the mean change for same children tested in two consecutive years. This increase from 1971-1972 to 1972-1973 was also significant.

The data from the WOIS and control groups tested during the 1972-1973 year are given in Tables 55 and 56. Table 57 gives results from the Stanford Achievement Test on Paragraph Meaning. The only significant difference was between white and non-white children with the white youngsters scoring higher than non-whites.

Data on the Word Meaning Test of the Stanford (Table 56) was similar to that of Paragraph Meaning with the added finding that school attendance was also a significant variable. Apparently, the youngsters who were at the WOIS for more than a year scored lowest on the Word Meaning section, children at the WOIS for less than a year scored next highest while children in control groups who did not attend the WOIS at all, scored highest on Word Meaning. Again, the white children scored significantly higher than the non-white group regardless of the particular attendance group to which they belonged.

Mental Ability

Results of the administration of the Otis Test of Mental Ability are shown in Table 57. As the data in that table indicate, the only significant difference was between white and non-white children with white children scoring higher than non whites. A factor analysis was carried out with the Mental Ability and achievement data. This was done because the evaluation staff felt that the Otis Quick Scoring Mental Abilities Test was as much an achievement test as it was a test of mental abilities. The factor analysis supports this contention. The combination of Stanford Achievement Test scores, on Word Meaning and Paragraph Meaning, and the Otis scores produced an achievement factor which was then analyzed in a three-way analysis of variance. As can be seen in Table 58, there were no significant differences between the groups for sex or for attendance at WOIS. However, significant differences remained between white and non-white children, with white children attaining a significantly higher achievement score than non-whites.

Non-Academic Testing

The non academic measures given this year were: Interest Inventory, Creativity Test, Self Concept, Attitude Toward Teacher and Attitude Toward School.

Attitude Toward Teacher*

A pupil Attitude Toward Teacher scale was constructed for this evaluation and is described in Section V. Results of administration of the scale to all three attendance groups are shown in Table 59. As indicated in Table 59 the only significant difference was for white and non-white children. White children were significantly more positive in their attitudes towards the teacher than were the non-white children.

Attitude Toward School

A measure of children's attitudes toward school was devised for the WOIS evaluation and a sample of the test as well as administration and scoring procedures is given in Section V. As indicated in Table 60, the only significant difference among the children who participated in the study was with respect to boys and girls. As Table 60 indicates, girls were significantly more positive in their attitudes towards school than were boys.

Self Concept

To assess children's attitudes towards themselves, a self concept scale was used. A sample of this test and a description of administration and scoring procedures is included in Section V. Results of administering the scale to the various groups in the WOIS study are given in Table 61 where it can be seen that the only significant effect was the interaction between race and attendance. Apparently, the self concept of white children who attended the WOIS for more than a year was higher than for white children who were at the school for less than a year. Just the opposite, however, would seem to be the case for non-white youngsters. That these effects were attributable to the WOIS experience is suggested by the fact that there was no difference between white and non-white children who were in the control group. These findings are depicted graphically in Figure 1.

---

* Items from the Attitude Toward School Scale were used to assess Attitude Towards Teacher. This was a subscale of the Attitude Toward Teacher Scale and not a separate test.

A self concept reliability study was also conducted during this period. Twenty children at each age level from 7 to 11 years of age were individually given the Self Concept Measure. Two weeks later they were again tested on the same measure. The correlation between test-retest was .67.

Creativity

One aim of the WOIS experience was to encourage children's creative potentials. To assess these potentials, the creativity test with three parts, developed by one of the evaluation team was used again in this evaluation year. A copy of the test, together with directions for administration and scoring is provided in Section V. Results of administering the test to children who participated in the WOIS study are shown in table 62 where it can be seen that there were significant effects for both race and attendance. Whites were significantly more creative than blacks, as measured by this test, and creativity was directly related to length of attendance at WOIS. The results of the latter finding are depicted graphically in Figure 2. However, it should be stressed that the creativity test used for this evaluation has not been broadly tested for validity and reliability. One should be cautious, therefore, about making inferences about the effects of WOIS experience on creative thinking.

Interest Inventory

Again this year a survey of pupil interest was conducted. The WOIS and control groups were queried concerning their non-academic interests. There appeared to be no major differences in the interest categories as reported by the subjects. Percentages of children engaging in music, arts and crafts, sports, hobbies and clubs in various age levels are given in Tables 63 and 64.

Table 51

1972-73 Evaluation Sample for
Sex, Race and Attendance

	Race	M	F	Totals
EX_1	W	26	19	45
	B	12	18	30
EX_2	W	14	14	28
	B	6	6	12
Cont.	W	29	25	54
	B	12	14	26

Total N = 195

Table 52

1972-73 Evaluation Sample: Geographical Distribution for Race and Sex and Attendance

		M	F
CNT	W	IC = 1 29 MC = 9 S = 10 OC = 9	IC = 5 25 MC = 4 S = 8 OC = 8
	B	IC = 3 12 MC = 3 S = 2 OC = 4	IC = 5 14 MC = 2 S = 2 OC = 5
EX_1	W	IC = 1 26 MC = 11 S = 3 OC = 11	IC = 3 19 MC = 8 S = 3 OC = 5
	B	IC = 7 12 MC = 4 S = 1 OC = 0	IC = 10 18 MC = 4 S = 1 OC = 3
EX_2	W	IC = 0 14 MC = 8 S = 2 OC = 4	IC = 0 14 MC = 1 S = 9 OC = 4
	B	IC = 3 6 MC = 2 S = 0 OC = 1	IC = 3 6 MC = 3 S = 0 OC = 0

IC = inner city N = 41
MC = middle city N = 59
OC = outer city N = 54
S = suburbs N = 41

Table 55

3-Way Analysis of Variance Summary Table

STANFORD ACHIEVEMENT
PARAGRAPH MEANING (STANDARD SCORE)

Source [a]	Sum of Squares	df	F
Main Effects			
Race	2375.929	1	10.283 ***
Sex	134.148	1	0.581
Attendance	1011.648	2	2.189
Interactions			
Race x Sex	252.561	1	1.093
Race x Attendance	96.565	2	0.209
Sex x Attendance	553.580	2	1.198
Race x Sex x Attendance	70.056	2	0.152
Within	42281.262	183	

* p .05
** p .02
*** p .01

BELOW ARE THE MEANS FOR THE SIGNIFICANT EFFECT

Race

W	B
57.69	50.14
N=127	N=68

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Table 36

3-Way Analysis of Variance Summary Table

STANFORD ACHIEVEMENT TEST
WORD MEANING (STANDARD SCORES)

Source [a]	Sum of Squares	df	F
Main Effects			
Race	1531.453	1	9.473 ***
Sex	1.253	1	0.008
Attendance	1242.160	2	3.842 **
Interactions			
Race x Sex	235.273	1	1.455
Race x Attendance	423.291	2	1.309
Sex x Attendance	267.344	2	0.827
Race x Sex x Attendance	173.000	2	0.537
Within	29583.516	183	

* p .05
** p .02
*** p .01

BELOW ARE THE MEANS FOR THE SIGNIFICANT EFFECTS

Race

W	B
58.49	52.69
N=127	N=68

Attendance

Ex_1	52.38	N = 75
Ex_2	58.65	N = 40
Control	59.22	N = 80

3-Way Analysis of Variance Summary Table

OTIS QUICK-SCORING MENTAL ABILITY TEST

Source [a]	Sum of Squares	df	F
Main Effects			
Race	5508.238	1	23.535 ***
Sex	351.982	1	1.504
Attendance	1097.639	2	2.345
Interactions			
Race x Sex	24.855	1	0.106
Race x Attendance	333.541	2	0.713
Sex x Attendance	59.332	2	0.127
Race x Sex x Attendance	56.926	2	0.122
Within	42829.875	183	

* p .05
** p .02
*** p .01

BELOW ARE THE MEANS FOR THE SIGNIFICANT EFFECT

Race

W	B
115.33	103.99
N=127	N=68

Table 58

3-Way Analysis of Variance Summary Table

ACHIEVEMENT FACTOR

Source	Sum of Squares	df	F
Main Effects			
Race	18.135	1	20.384 *
Sex	0.433	1	0.487
Attendance	4.795	2	2.695
Interactions			
Race x Sex	1.354	1	1.522
Race x Time	0.857	2	0.482
Sex x Time	1.532	2	0.861
Race x Sex x Attendance	0.071	2	0.040

* P .001

BELOW ARE THE MEANS FOR THE SIGNIFICANT EFFECT

Race

W	B	
.230	-.429	(factor score)
N=127	N=68	

Table [illegible]

3-Way Analysis of Variance Summary Table

PUPIL ATTITUDE TOWARDS TEACHER

Source [a]	Sum of Squares	df	F
Main Effects			
Race	15.353	1	7.884 ***
Sex	3.166	1	1.626
Attendance	1.710	2	0.439
Interactions			
Race x Sex	0.166	1	0.085
Race x Attendance	7.811	2	2.006
Sex x Attendance	0.055	2	0.028
Race x Sex x Attendance	0.266	2	0.068
Within	356.368	183	

* p .05
** p .02
*** p .01

BELOW ARE THE MEANS FOR THE SIGNIFICANT EFFECT

Race

W	B
6.013	3.380
N =127	N = 68

Table 60

3-Way Analysis of Variance Summary Table

PUPIL ATTITUDE TOWARDS SCHOOL

Source [a]	Sum of Squares	df	F
Main Effects			
Race	0.536	1	0.095
Sex	36.757	1	6.511 **
Attendance	9.402	2	0.833
Interactions			
Race x Sex	0.0	1	0.0
Race x Attendance	8.522	2	0.755
Sex x Attendance	6.026	2	0.534
Race x Sex x Attendance	9.675	2	0.857
Within	1033.108	183	

* p .05
** p .02
*** p .01

BELOW ARE THE MEANS FOR THE SIGNIFICANT EFFECT

Sex

M	F
15.120	16.097
N = 99	N = 96

3-Way Analysis of Variance Summary Table

SELF CONCEPT

Source [a]	Sum of Squares	df	F	
Main Effects				
Race	3848.552	1	2.150	
Sex	577.283	1	0.323	
Attendance	551.626	2	0.154	
Interactions				
Race x Sex	269.398	1	0.151	
Race x Attendance	17703.336	2	4.946	***
Sex x Attendance	4092.293	2	1.143	
Race x Sex x Attendance	4502.805	2	1.258	
Within	327509.000	183		

* p .05
** p .02
*** p .01

BELOW ARE THE MEANS FOR THE SIGNIFICANT INTERACTION

Race x Attendance

	W	B
Ex_1	34.88 N=45	33.97 N=30
Ex_2	32.59 N=28	36.58 N=12
Control	34.98 N=54	34.98 N=26

Table 62

3-Way Analysis of Variance Summary Table

CREATIVITY (FACTOR SCORE)

Source [a]	Sum of Squares	df	F
Main Effects			
Race	7.151	1	8.105 ***
Sex	0.010	1	0.012
Attendance	10.263	2	5.816 ***
Interactions			
Race x Sex	0.097	1	0.111
Race x Attendance	2.930	2	1.661
Sex x Attendance	2.292	2	1.299
Race x Sex x Attendance	0.051	2	0.029
Within	161.449	183	

* p .05
** p .02
*** p .01

BELOW ARE THE MEANS FOR THE SIGNIFICANT EFFECTS

Race

W	B
.150	-.280 (factor score)
N = 127	N = 68

Attendance

Ex_1	Ex_2	Control
.304	.103	- .337
N = 75	N = 40	N = 80

Figure 1

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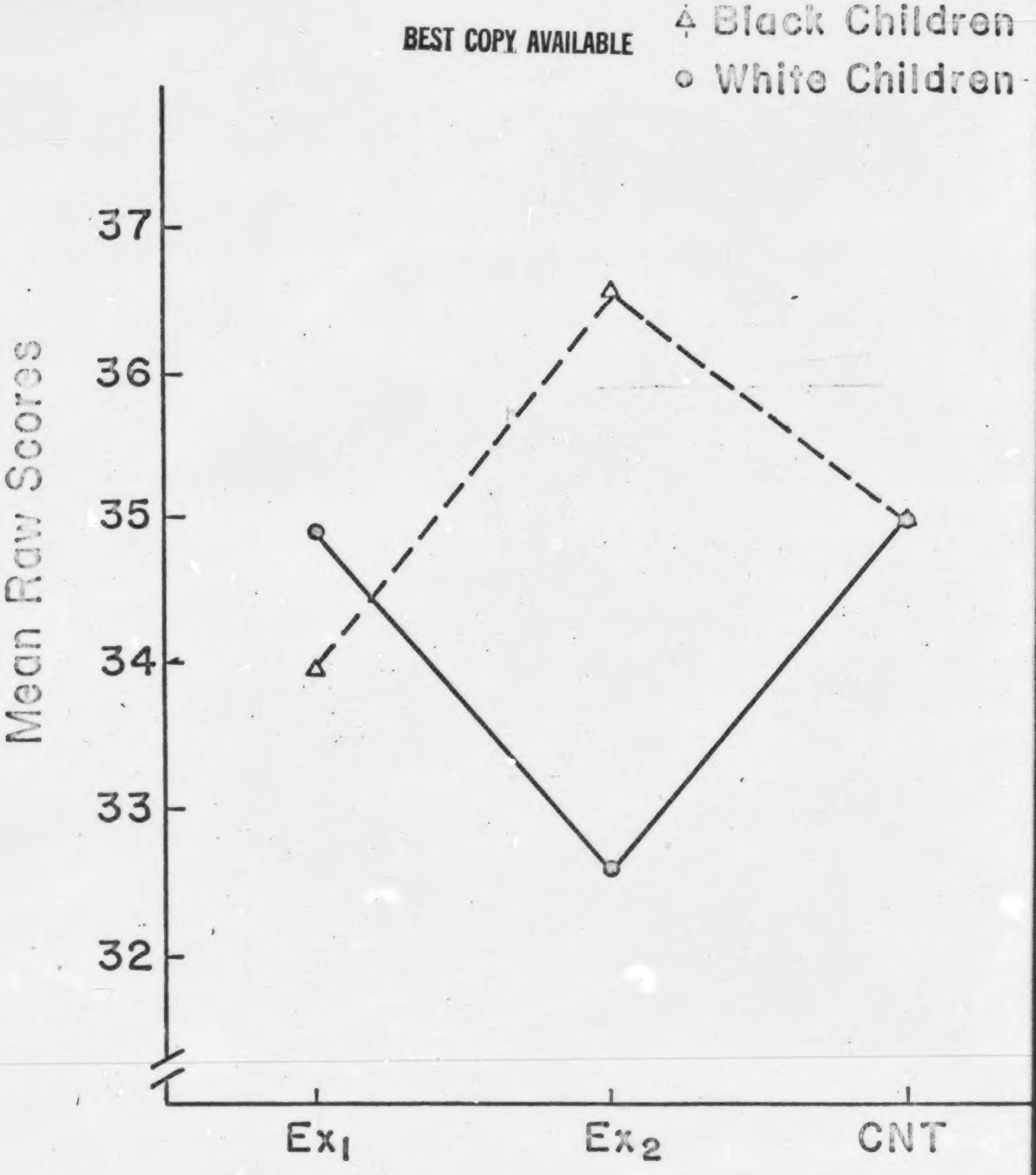
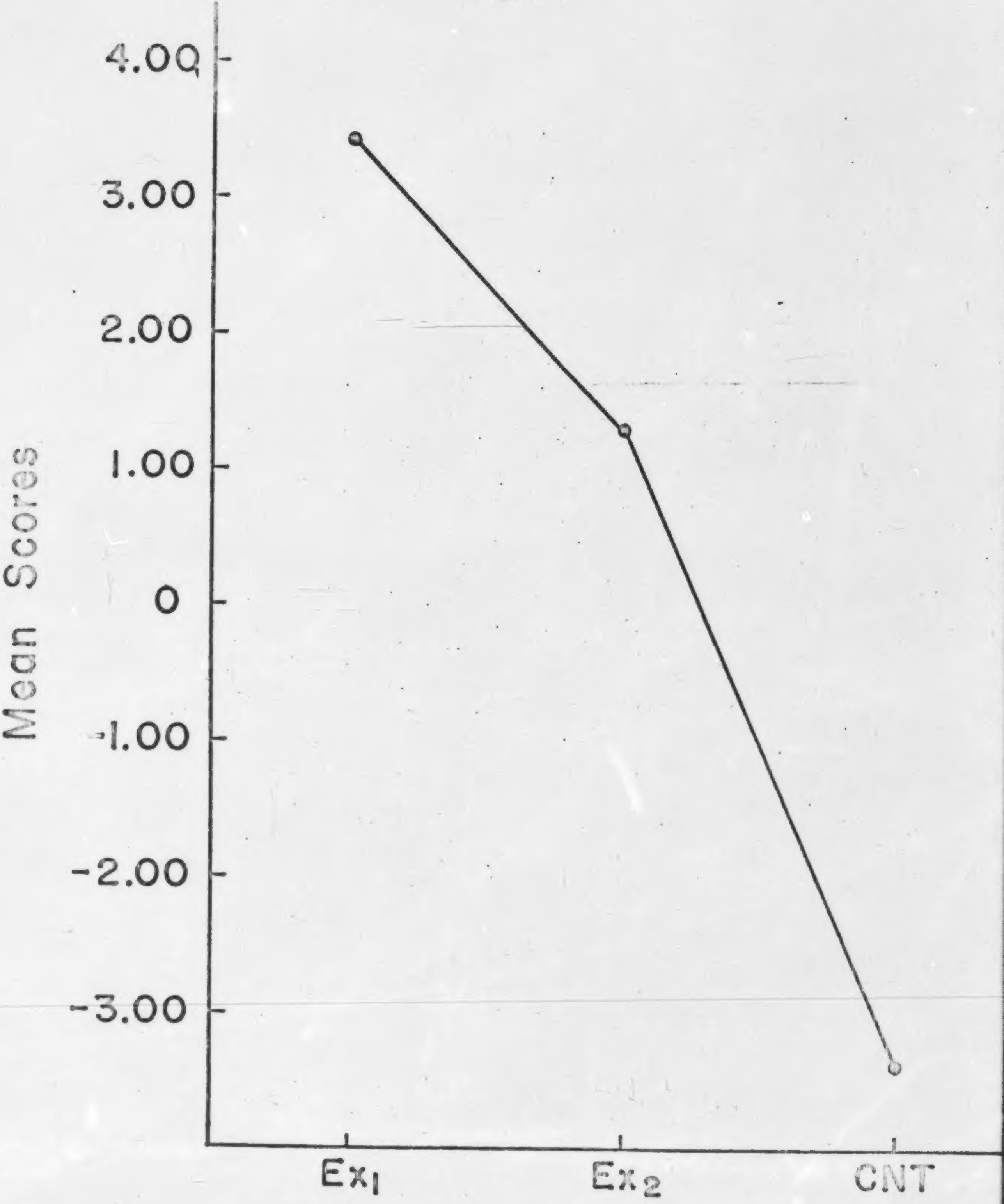


MEAN SELF CONCEPT SCORES FOR RACE AND ATTENDANCE

Figure 2



MEAN CREATIVITY FACTOR SCORES FOR THREE ATTENDANCE GROUPS

SCHOOL YEAR
1972-1973

Measures

1) Self Concept
2) Creativity
3) Pupil Attitude (3) *
4) Interest Inventory
5) Social Distance

Subjects

1) through 4) 40 WOIS children attending WOIS less than 1 year.
80 WOIS children attending more than 1 year.
5) 4 schools, WOIS, IC, MC, OC. 48 children from each school.

Results

1) black children attending WOIS less than 1 year had a higher self concept than white children attending WOIS less than 1 year **
2) children attending WOIS for more than 1 year had higher creativity scores than children who attended less than a year who, in turn, had higher scores than control children.**
3) no significant difference between WOIS and control children.
4) no significant difference between WOIS and control children
5) no significant difference between WOIS and control children for distance, choice or direction.

Comments

Self concept reliability study conducted this year.
Correlation between test and retest .67

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* numbers indicate form of measure used. For further details, see Section V.

** statistically significant

VI. Tests and Measures Used in the Evaluation

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Table 63

Interest Categories of World of Inquiry Children
By Age

(in per cent)

1972-1973

	AGE 6		AGE 7		Age 8		Age 9		AGE 10		Age 11	
	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School
1. Music												
a. Do you play?	9 %	36 %	31 %	46 %	22 %	33 %	19 %	63 %	00 %	66 %	50 %	75 %
b. Do you take lessons?	9	9	23	8	22	22	25	38	11	56	50	25
2. Arts & Crafts	73	73	100	62	100	39	69	69	66	65	88	75
3. Sports	36	100	62	77	67	95	69	88	66	89	88	100
4. Hobbies	9	82	15	69	11	78	25	63	66	89	38	88
5. Clubs	00	36	8	62	6	78	19	31	22	76	00	50

Table 64

Interest Categories of Control Children
By age

(in per cent)
1972-1973

	AGE 6		AGE 7		AGE 8		AGE 9		Age 10		Age 11	
	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School	In School	Out of School
1. Music												
a. Do you play?	7 %	38 %	0 %	46 %	30 %	69 %	70 %	70 %	38 %	62 %	14 %	42 %
b. Do you take lessons?	0	23	7	0	30	8	47	23	46	23	0	42
2. Arts & Crafts	62	92	67	73	77	77	70	47	85	77	57	100
3. Sports	7	100	27	27	23	92	65	82	77	100	71	100
4. Hobbies	15	77	0	80	23	69	12	65	8	92	0	71
5. Clubs	7	46	0	53	23	61	18	41	38	23	0	57

Social Attitude and Distance Scale (1)
1968

Purpose

To assess children's attitudes toward others of different ethnic or racial origins.

Materials

Six pictures depicting black and white children in various situations were presented. Children were asked to tell stories about what was happening in the pictures. Stories were scored for negative and positive attitudes. (see pages 136-141).

Procedures

The test is administered individually. The child is told, "I am going to show you some pictures one at a time and then I will ask you questions about it, okay?" The cards are then presented and the standardized questions (pages 134 and 135) are posed to the child.

Scoring

Results from the different pictures were compared to see which were described the most or least favorably.

SOCIAL ATTITUDE

1. Policeman and boys

   a. What's happening?

   b. What is the policeman saying to the boys?

   c. Who is to blame? (if previous answer does indicate that something negative has happened)

   d. What will parents say?

2. White family

   a. Do these people know each other?

   b. (If say this is a family) What does father do? Does he have a job? What kind of job? How much money does he make?

   c. Mother work? What does she do? How much money does she make?

   d. How does family get along?

   e. Would you want to know this family?

3. Boxing

   a. What's happening?

   b. Who is going to win?

   c. Do they like each other? Before fight? After fight?

   d. For whom is the crowd cheering?

   e. Does White? Black? have a family

   f. Would you like to know either of them?

4. Black family

   (same questions white family a-e)

   f. Which family would you like to know better? Why?

5. Baseball Team

   a. What are they doing?

   b. Who is the hero of the team? (if mention baseball game)

   c. Which two do you think are the best friends? If you had to pick two, which two would be the best friends?

Social Attitude (cont'd)

6. Man resting

   a. What is this man doing? Why?

   b. Does he work? What kind of job?

Social Distance Scale (2)

(1969-1970 revision)

Purpose

To assess children's attitudes towards others of different ethnic and racial backgrounds by looking at the physical distance the children put between themselves and others.*

Materials

A piece of green pegboard 18 x 23 13/16 with the holes numbered as a two dimensional grid provided the social distance field. Eight wooden figures 4 1/2" high, each of which had a peg extending downward that enabled the figures to stand upright when the peg was placed in the board, were the manipulable materials. Of the eight figures, four were boys and four were girls. Two of the boys and two of the girls were white, while the remaining figures were black. All the boys were dressed in the same fashion and the same was true for the girls. The only differences between the figures of the same sex were in hair and skin color.

Procedures

Each child was first presented with two blank figures which had no picture of a child pasted on them but which was the same outline as the other eight figures. The child was asked to experiment with placing these figures on the board to insure he could insert them properly and that his positioning of identifiable figures was not fortuitous. The child was then given a choice of four figures (same sex as subject) from which he was to choose two for placement on the board in "pretend" conversation. After the child's choice, the figures were reassembled, he was asked to go through the procedure again and the whole procedure was repeated still a third time. A scoring sheet (page 142) was used to record the child's responses.

---

* The social distance measure employed in the 1969-1970 evaluation was based on Kuethe (1962) and Little's (1968) work in this area. Little (1968) found that subjects placed real people as well as plexiglas figures representing people closer together if they perceived the people or figures as having similar rather than dissimilar political philosophies. Kuethe found that subjects clustered figures together whom they saw as belonging together. Kuethe (1962) also found that in replacing pairs of figures people replaced human figures closer together than two rectangles. Our test was modeled after some of the procedures used by Kuethe and Little.

Scoring

Each child's performance was scored in regard to the particular figure chosen, the combination in which they were chosen (e.g. WW, BW, or BB) and the distance (measured in inches) between the chosen figures. See attached instructions.

SOCIAL DISTANCE SCALE (2)

NAME ____

SCHOOL ____

RACE ____

AGE ____

Instructions:

"We are going to play a game. Make believe these figures are children. Pick two children and place them on the playground. Pretend they are talking to each other. Put them anywhere you would like to. First let's practice with these blank figures. Good, now we are ready to play the game. Now pick two children and put them anywhere on the playground you want to." Replace chosen dolls and go through the procedure two more times.

	X	Y	Coordinates
Blank			
1.			
2.			
3.			

Social Distance Measure (3)
(1971-1972 revision)*

Purpose

To assess children's attitudes towards others of different ethnic or social origins.

Materials

A 36" x 24" brown masonite board was used as the social distance field. Eight self standing, commerical produced black and white plastic dolls were the stimulus figures. There were four boys and four girls with two white and two black dolls for each sex.

Procedures

Each child was presented with four dolls, two black and two white, of the same sex as the subject. The children were then successively asked to place the dolls together under four circumstances, when the figures were: (1) friends, (2) acquaintances, (3) strangers and (4) unfriendly.

Each child was asked to choose two of the four dolls who were "friends" and to put them on the playground where they thought friends would be on the playground. The child was asked to place one doll on the board at a time with his or her dominant hand, and he was not allowed to select more than one doll at a time. (This is necessary because after each trial one doll was eliminated. The doll the subject chose first was the one that was eliminated.) The second doll was returned to the group and the child again was asked to choose two dolls from the remaining three and place them on the playground. Thus the first trial was a completely free choice trial with the remaining trials having limitations imposed by the experimenter. The same method was used for all conditions.

---

* The social distance measure employed in 1971-1972 evaluation was a revision of the 1969-1970 social distance measure.

Scoring

Responses were recorded on the sheet reproduced on page 147. A child's performance was scored according to the color of figures chosen, separation distance between the figures and the direction the figures were facing.

SOCIAL DISTANCE (3)

NAME ____________________ DATE ____________________

CONDITION ____________________

TRIAL	COMBINATION CHOSEN	DIRECTION	DISTANCE
1.			
2.			
3.			
4.			
1.			
2.			
3.			
4.			
1.			
2.			
3.			
4.			
1.			
2.			
3.			
4.			

Creativity

Purpose

To assess children's readiness to make new, novel and unconventional responses to problem situations.

Materials

The test consists of three sections each of which is associated with ten response items. A copy of the test is presented on pages 150 and 151.

Procedure

The test is individually administered. The examiner says, "I am going to read you some questions and I would like you to answer them." The examiner then reads the question with the first response item and asks the child to respond, i.e., "Could you get a cup of sugar into a pumpkin?" The procedure is repeated for each of the three sections and for each of the ten response items associated with it. If the child answers "yes" to a particular response item, the examiner asks "how?" and then inquires if "there is any other way".

Scoring

Responses are scored by three raters working independently and working with the scoring scheme described on page 149. Inter-rater reliability is quite high (better than 85%) and disagreements are settled by discussion.

3 points - unique response (less than 5% occurence for each age level)

2 points - typical responses

1 point - responses repeated within a grouping (part A, B, or C)

1 point - responses on parts A and B which do not involve an active transformation of the elements involved (i.e. "You can dump the sugar into the water" or "I've seen square barrels" if the child can convince you that he actually has seen a square barrel).

0 points - repeated answers to a single test item (or very close answers)

0 points - inappropriate responses

Creativity Test

(Yes or no questions, if yes how. After first explanation ask if there is any other way.)

A. Into how many of these could you get a cup of sugar (sugar not the cup)

1. pumpkin
2. turtle
3. bell
4. floor
5. paper
6. horse
7. telephone book
8. record
9. water
10. shirt

B. How many of these could be a square

1. tape
2. tree
3. chalk
4. hanger
5. rubber ball
6. barrel
7. rain
8. marble
9. fried chicken
10. bicycle

C. Are these alike in any way: Peach &

1. Baseball
2. teddy bear
3. steak
4. roller skate
5. banana
6. acorn
7. map
8. ice cream
9. mop
10. sponge

Pupil Attitude Scale (1)

Purpose

To assess children's attitudes towards various aspects of school and school life.

Materials

To assess children's attitudes towards school, a word association test was devised. The test was a printed sheet that contained 10 school related cue words and 24 non-school related neutral words. See page 153 for a copy of the test.

Procedures

The test was individually administered. Each child was instructed, "I am going to say some words and I want you to tell me the first idea or word that you think of when I say it, okay?" The words were then read to the child and his responses were recorded on the cue word sheet.

Scoring

Only the responses to the school related words were scored. Responses were assigned to a five point scale of negativeness or positiveness towards school. For example when associated to the word "teacher" a response of "crabby" was assigned a score of "1", a response of "work" was assigned a score of "2", the response "teach" was given a "3" score, the response "learn" was given a "4" score and the response "nice" was scored "5". Three persons rated the responses independently and disagreements as to ratings were resolved by discussion. See attached copy.

Pupil Attitude Scale

I am going to say some words and I want you to say the first word that comes into your head when you hear the word.

For example, say the first word that comes into your mind when I say, sugar __________________.

Good, now lets do some more.

snow ____________________

sun ____________________

dog ____________________

book ____________________

hot ____________________

pencil ____________________

candy ____________________

test ____________________

chicken ____________________

car ____________________

teacher ____________________

shoe ____________________

mother ____________________

bike ____________________

classroom ____________________

water ____________________

toy ____________________

reading ____________________

witch ____________________

table ____________________

math ____________________

water ____________________

boy ____________________

long ____________________

girl ____________________

school ____________________

house ____________________

Halloween ____________________

grades ____________________

store ____________________

science ____________________

baby ____________________

gym ____________________

doctor ____________________

fat ____________________

Pupil Attitude Scale (2)

(1971-1972 revision)

Purpose

To assess children's attitudes towards various aspects of school and school life.*

Materials

A list of 32 questions of which eleven related directly to school life. A copy of this test is presented on pages 155 and 156.

Procedure

Each child was tested individually. The child was told, "I am going to read you a list of things that people like and do not like to do. I want you to tell me which of the things you like or do not like to do. Okay, do you understand?" The list was then read to the child and his responses were recorded on the score sheet.

Scoring

Only the responses to the school related items were scored. Attitude toward school was indicated by the percent of positive responses to school related items.

---

* The pupil attitude scale used in 1971-1972 was a revised version of the 1969-1970 scale used in the previous evaluation.

1) Having a birthday party ____________________

2) Being sent to bed early ____________________

3) Going to school ____________________

4) Meeting your teacher at a supermarket ____________________

5) Going swimming ____________________

6) Missing a day of school ____________________

7) Sleeping over at a friend's house ____________________

8) Being asked a question at school ____________________

9) Not being able to watch TV ____________________

10) Going on a picnic ____________________

11) Getting a pet ____________________

12) Working alone with your teacher ____________________

13) Going to the movies ____________________

14) Having a friend move out of the neighborhood ____________________

15) Being yelled at by your parents ____________________

16) Getting out of school ____________________

17) Drawing a picture ____________________

18) Going to the zoo ____________________

19) Meeting your teacher in the halls at school ____________________

20) Catching a cold ____________________

21) Losing your gloves ____________________

22) Talking to your teacher ____________________

23) Going out to dinner ____________________

24) Falling on the playground ____________________

25) Working alone at school ____________________

26) Staying up late ____________________

27) Having a scary dream ____________________

Pupil Attitude Scale (cont'd)

28) Reading a school book ____________________

29) Going to a dentist ____________________

30) Getting new toys ____________________

31) Eating ice cream ____________________

32) Having a substitute teacher ____________________

Pupil Attitude Scale (3)
(1972-1973 revision)

Purpose

To assess children's attitudes toward school and school life.

Materials

Eight story sequences depicted in pictures and dealing with school situations were employed.* The story sequences are presented on pages 159 through 166. To assess responses, a sheet with rows of four faces of varying emotional expression (happy, neutral, sad, angry) were employed.**

Procedure

The test was individually administered. Each child was shown each story sequence and asked the question shown at the bottom of the page containing the depicted story sequence. The child was shown the rows of different faces and after the examiner made sure that the child could correctly identify the various emotions, he was asked to mark the face he felt belonged to the child in the last frame. In addition to the eight questions that were asked in connection with the pictorial sequences, two questions were asked without accompanying pictorial material. These were (9) "Mark the face that shows how you feel when you come to school in the morning", and (10) "Mark the face that shows how you feel when school is over for the day and you are going home".

---

* The pictorial story sequences were selected from The Children's Attitudinal Range Indicator developed by Victor Cicirelli, William Cooper and Robert Granger. Permission to use the measure in the WOIS evaluation was granted by Dr. Cicirelli of Purdue University's Department of Child Development and Family Life.

** The faces used in the response measure were taken, with the permission of Robert Karplus (University of California at Berkeley) from the Interaction and Systems Evaluation Supplement, Trial edition, June, 1971.

Scoring

The results were scored for attitude toward teacher (questions 4, 5, and 8) and attitude toward school in general (questions 1, 2, 3, 6, 7, 9, and 10), as in the following:

Questions 1, 2, 3, 4, 5, 6, and 8:

happy - 3
neutral - 2
sad - 1
angry - 1

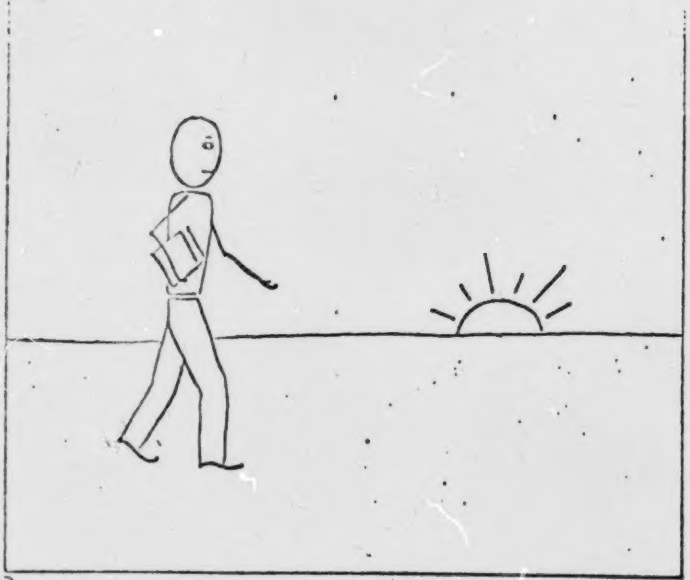
Question 7

happy - 1
neutral - 2
sad - 3
angry - 3

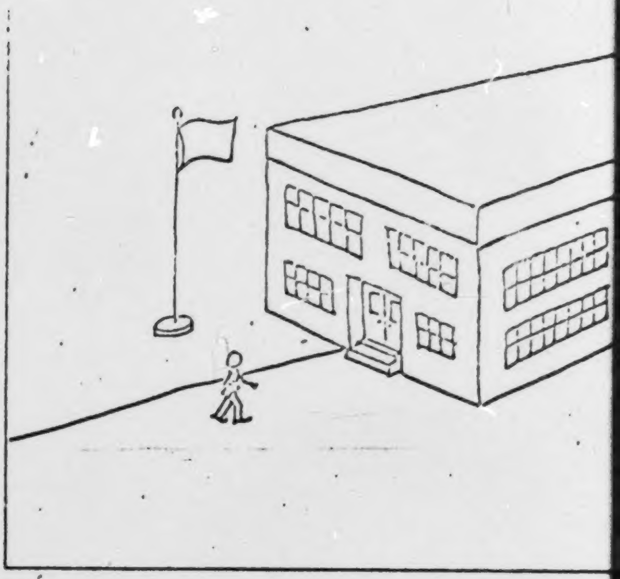
Questions 9 and 10 were scored in combination:

happy - happy - 5
neutral - sad - 4
sad - happy - 1
angry - neutral - 1
neutral - happy - 2

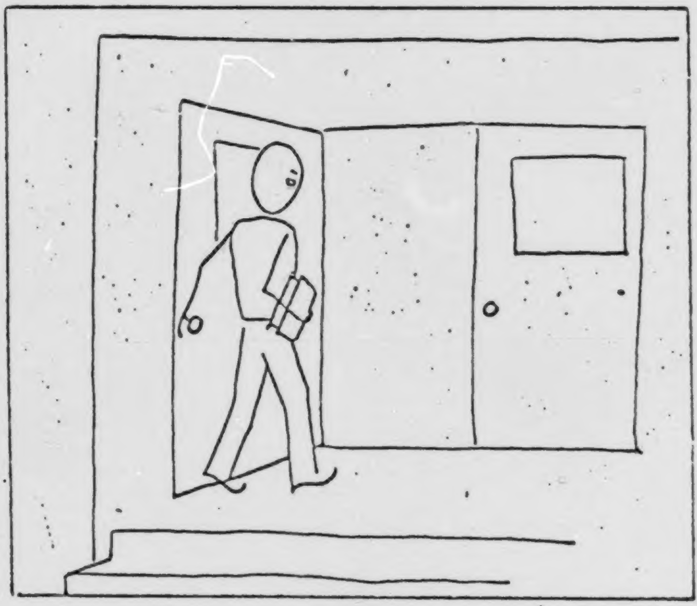
happy - sad - 3
neutral - neutral - 3
angry - happy - 1
happy - neutral - 2
sad - neutral - 1



Bobby is on his way to school.



He gets to school.



He opens the door and goes inside.

1. Which face do you think is Bobby's face?

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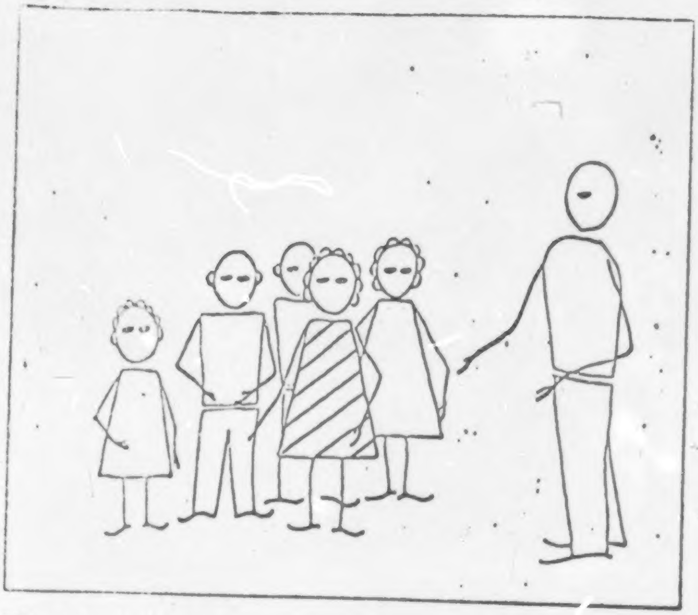
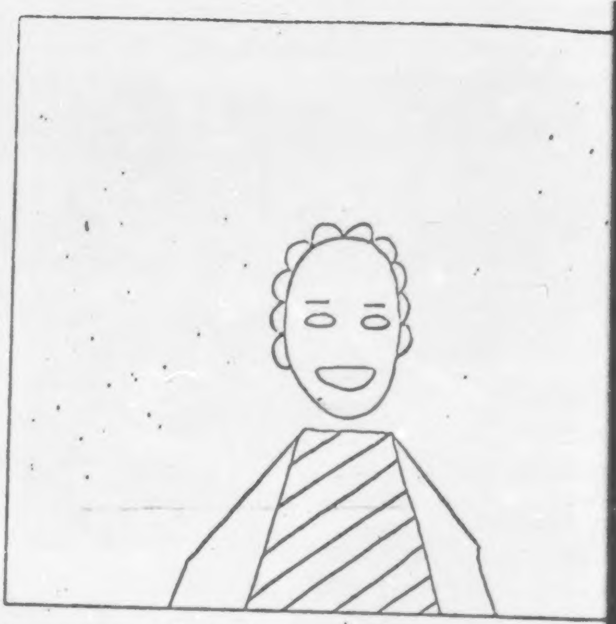
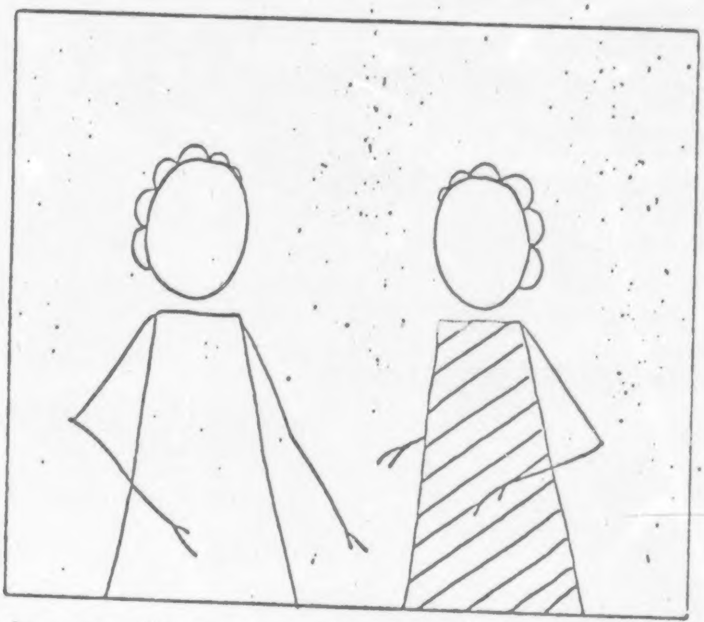


The principal says "From now on, the school will be open on Saturday morning for children who want to come to read, to play games, or to make things."

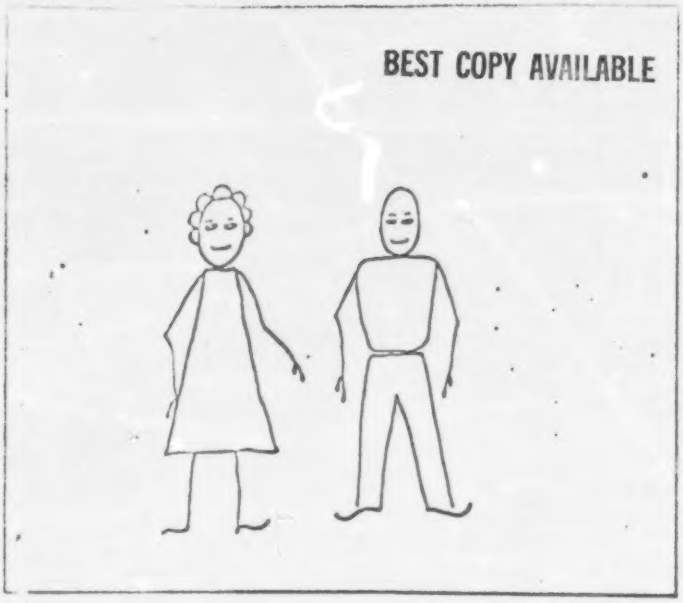


Karen says, "Oh Jane, that's a good idea. Let's come over here on Saturday."

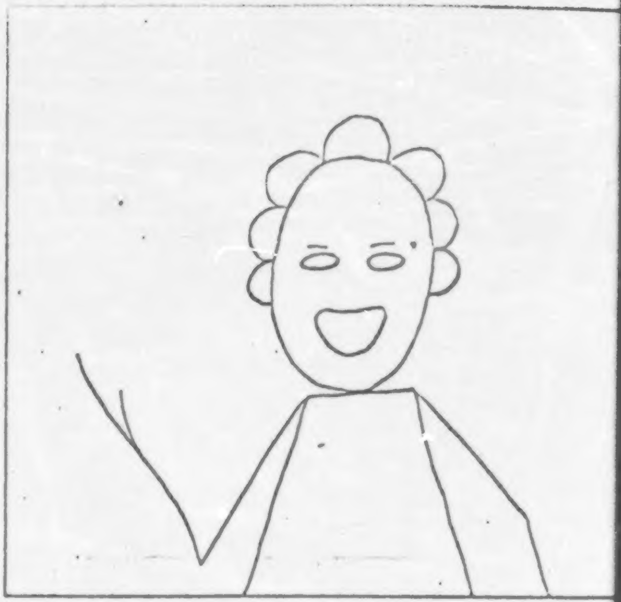


Jane says, "Well—."

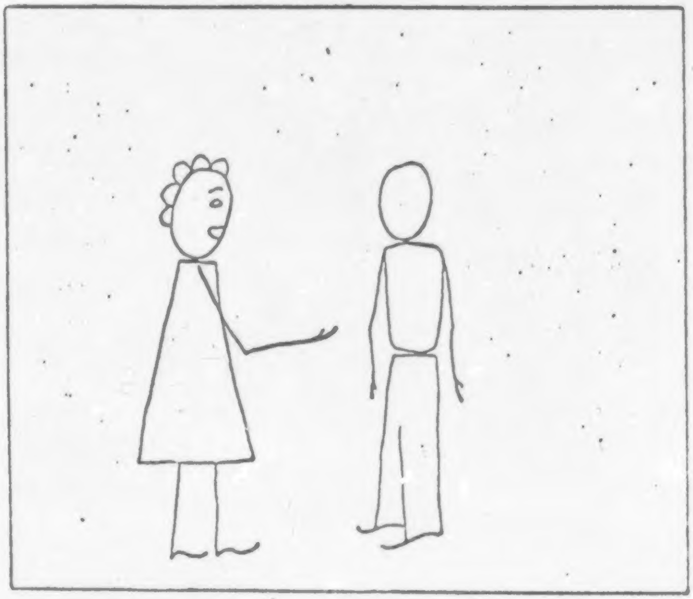
2. Which face do you think is Jane's face?



Jean is visiting Dave.

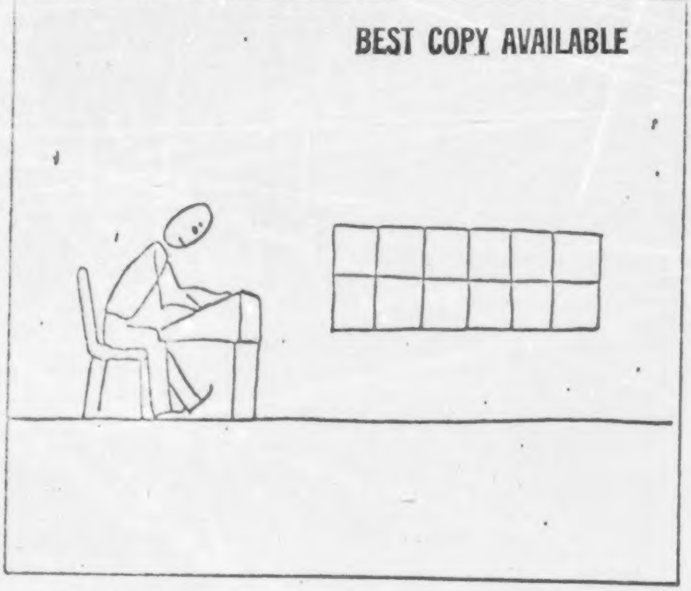


She says, "I go to a nice school."

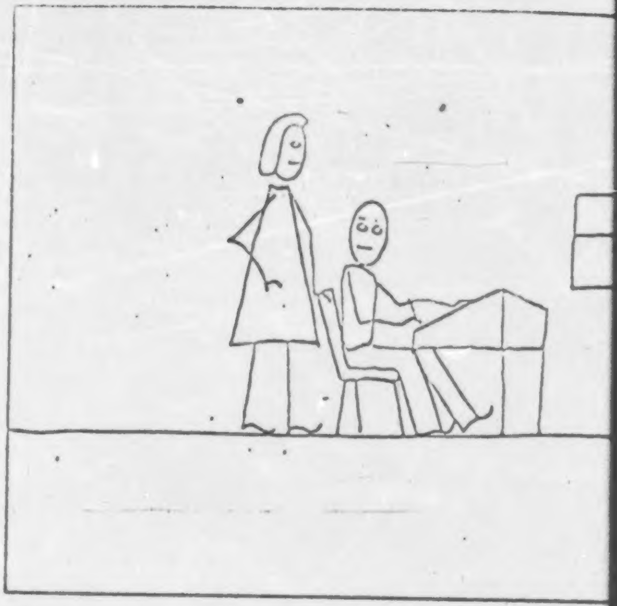


She says, "How do you like your school, Dave?"

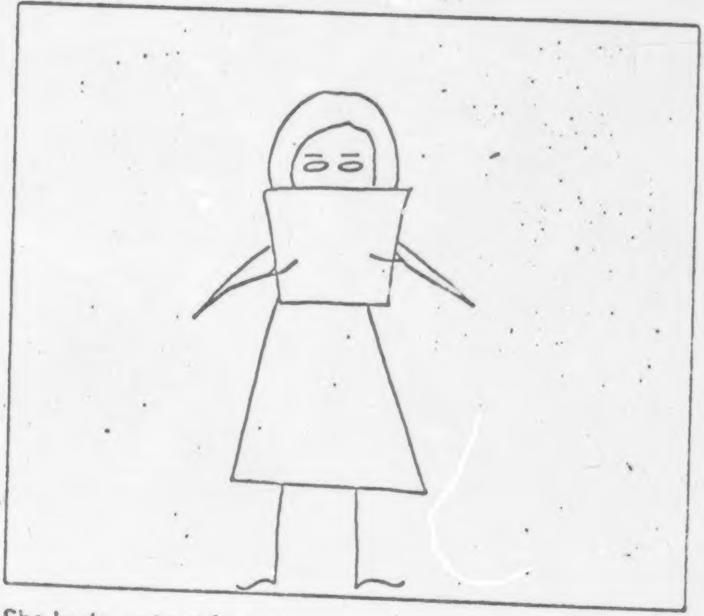
3. Which face do you think is Dave's face?



Mark is working at school.

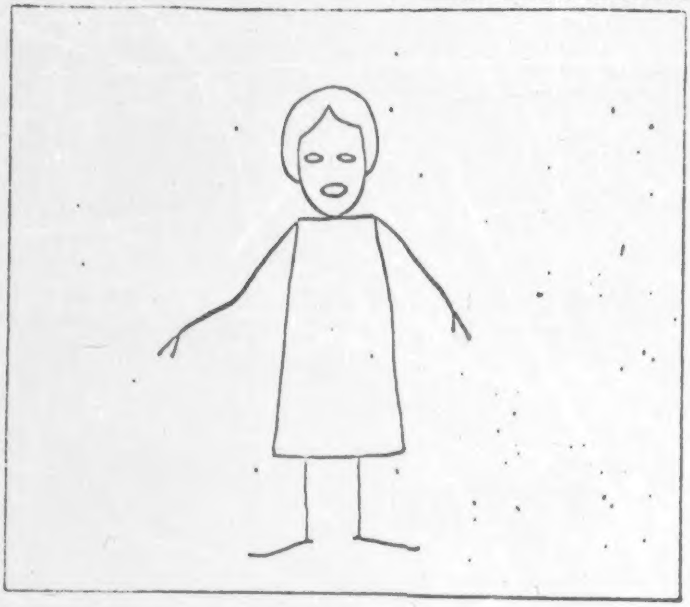


Mark's teacher comes over.

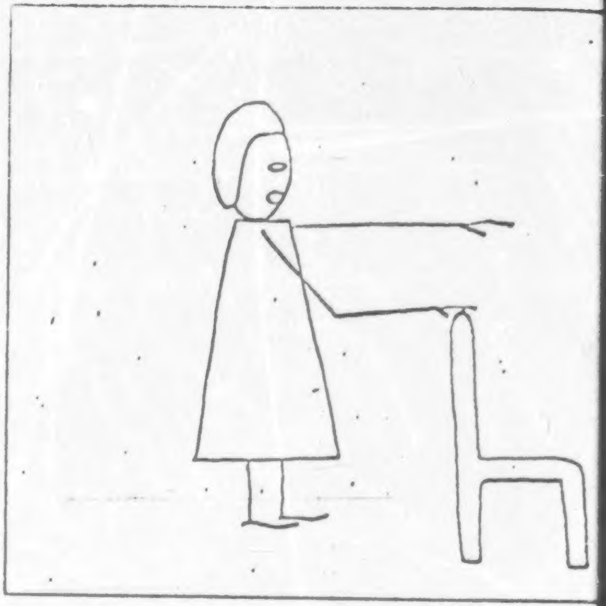


She looks at Mark's work.

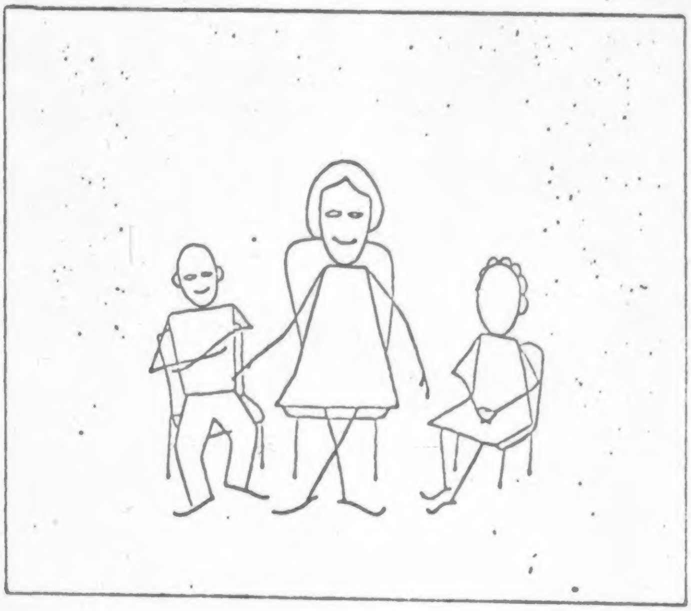
4. Which face do you think is Mark's face?



The teacher says, "Class, let's put our chairs together in a circle."

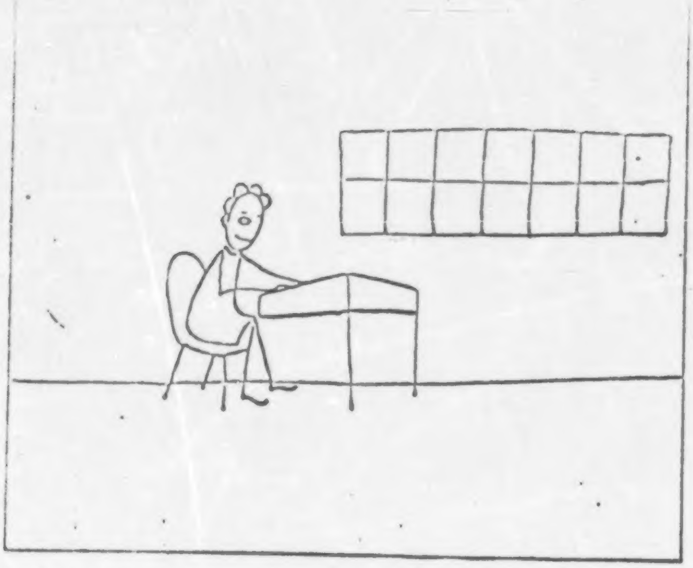


She says "Kathy, come put your chair here next to mine today."

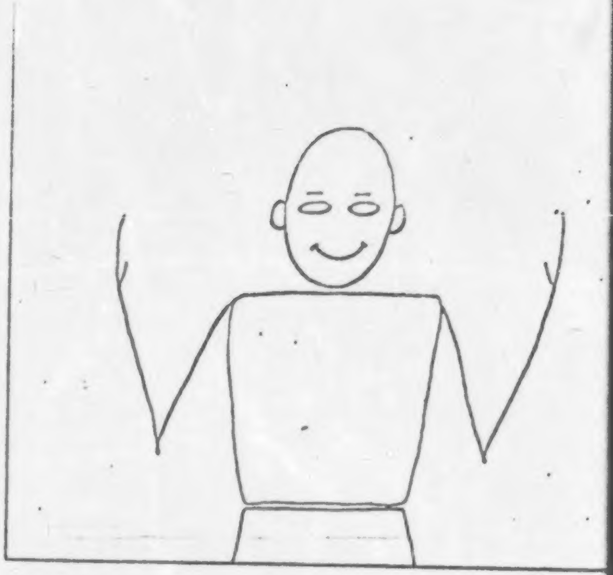


The class sits down. Kathy is next to her teacher.

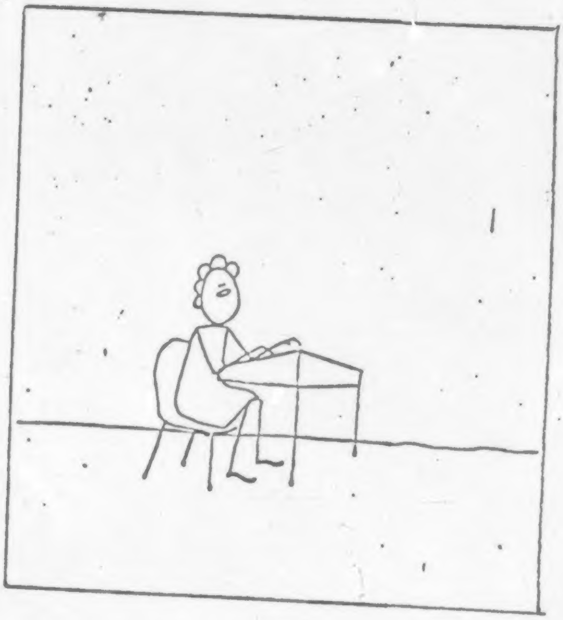
5. Which face do you think is Kathy's face?



Julie is in school.

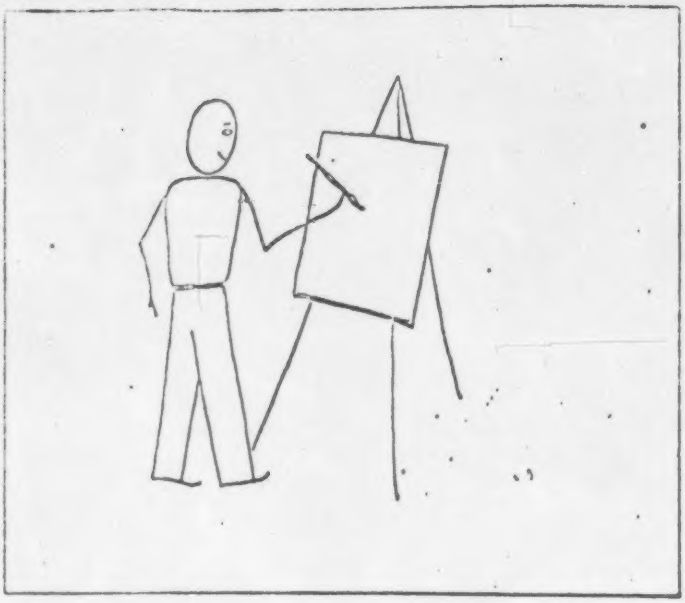


Each child is telling about his favorite food.

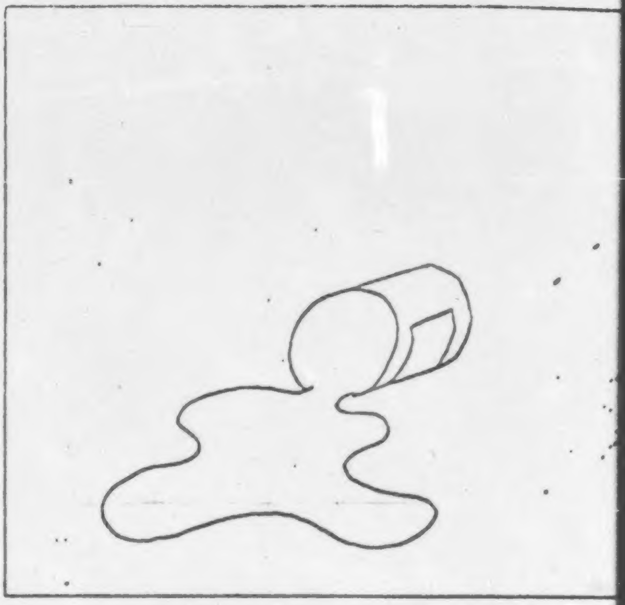


It is Julie's turn to tell about her favorite food.

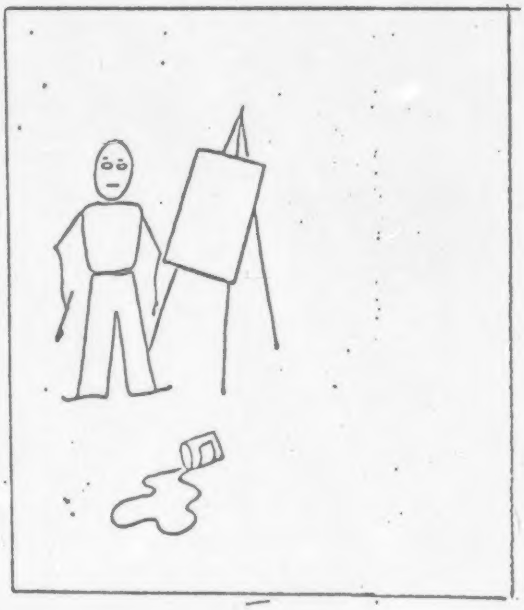
6. Which face do you think is Julie's face?



Ray is painting at school.

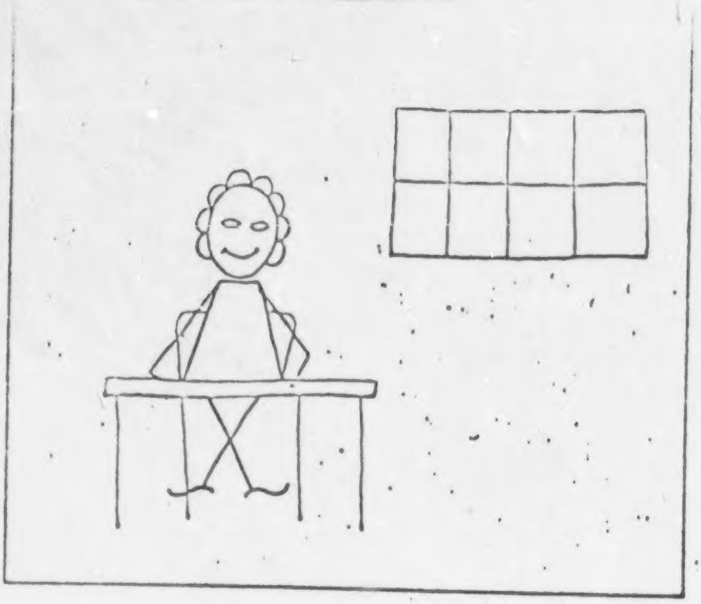


He spills some paint on the floor.

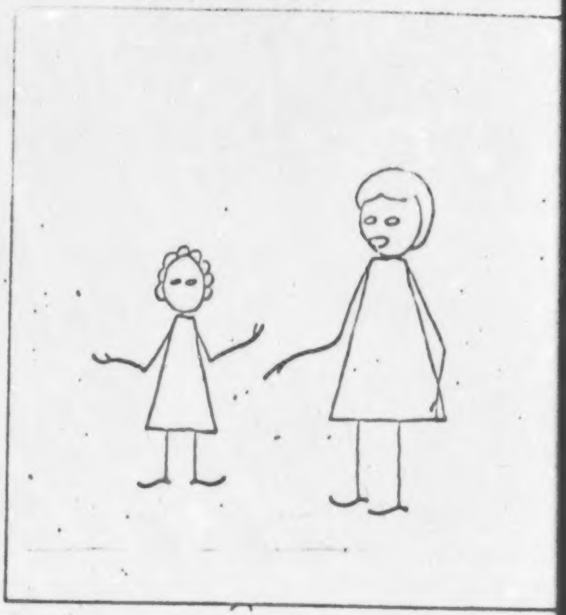


How does Ray feel?

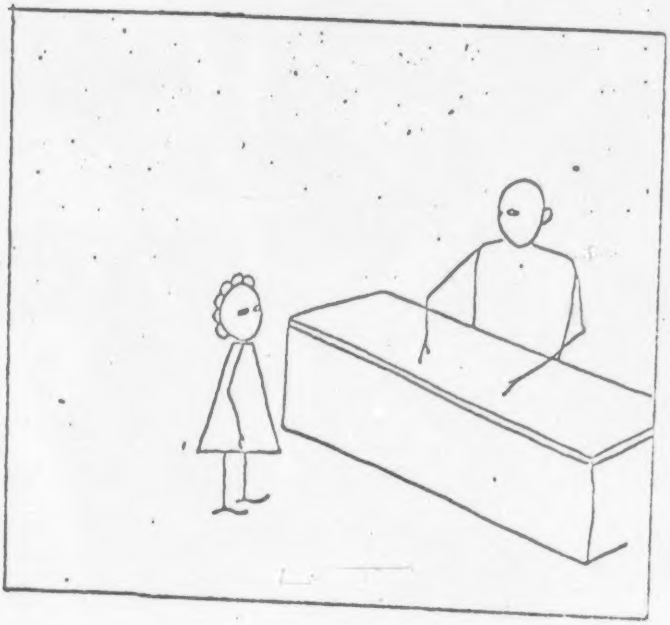
7. Which face do you think is Ray's face?



Ann is at school.



Her teacher says, "Go to the offic
Ann, the principal wants to see yo

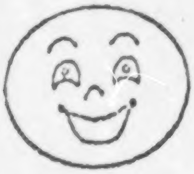
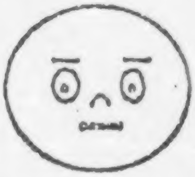
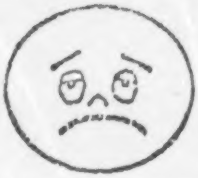
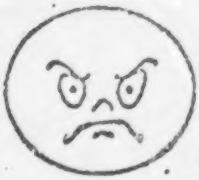


Ann goes to the office. She sees the principal.

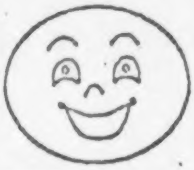
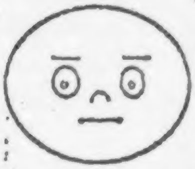
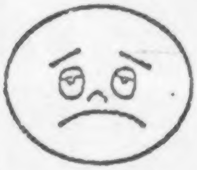
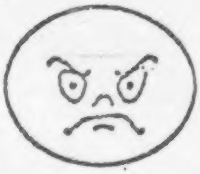
8. Which face do you think is Ann's face?

NAME ______________________ AGE ____________

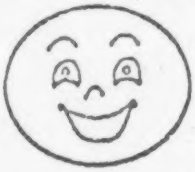
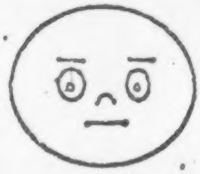
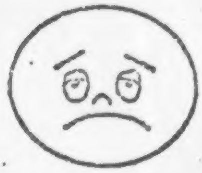
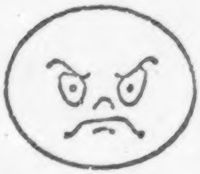
Question No. 1.

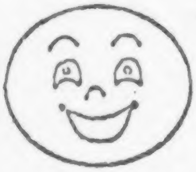
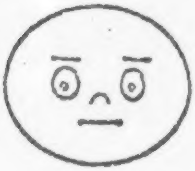
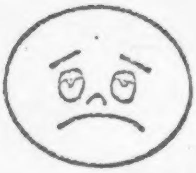
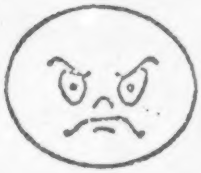
Question No. 2.

Question No. 3.

Question No. 4.

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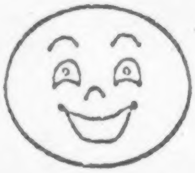
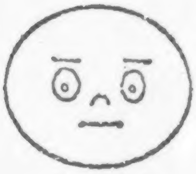
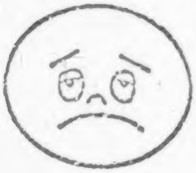
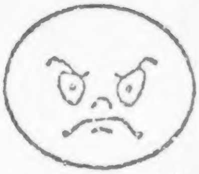
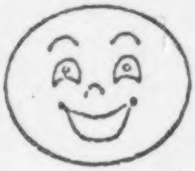
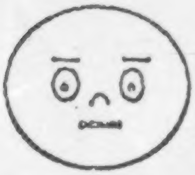
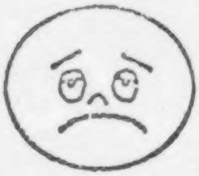
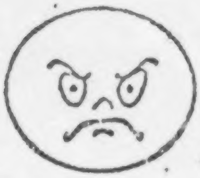





NAME ______________________________ AGE ______________

Question No. 6.

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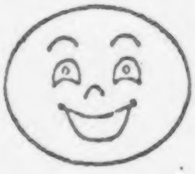
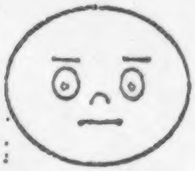
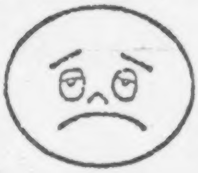
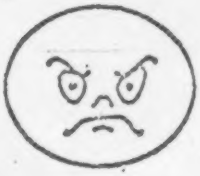

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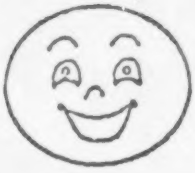
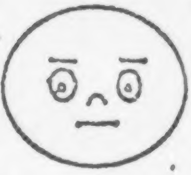
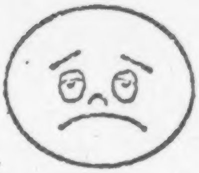
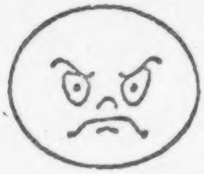

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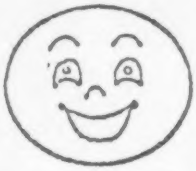
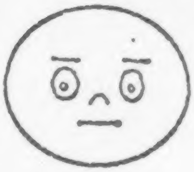
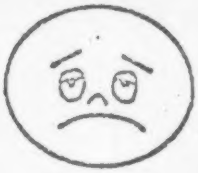
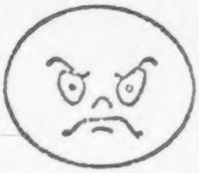

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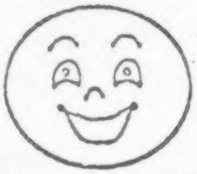
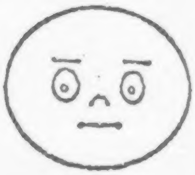
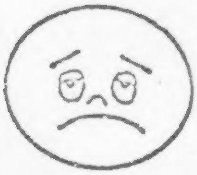
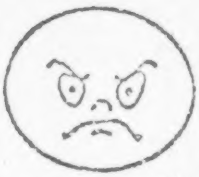

Self Concept Scale

Purpose

To assess the extent of a child's positive attitudes towards himself.

Materials

The self concept scale consists of a 40 item adjective check list (page 170), containing both positive and negative descriptive terms.

Procedures

The self concept test is individually administered. When testing a child, the examiner says, "I am going to read a list of words to you. When you hear them, I would like you to tell me if you think they are like you or not like you. For example, if I say, 'clever' and you think you are a clever person, you say yes, if you think you are not a clever person, you say no. I want to know what words are like you most of the time." The examiner then reads the adjectives one at a time and records the child's responses. If the child hesitates or indicates that he does not understand a term, a standard definition of the term is given.

Scoring

A child is given a score of 1 for every "yes" to a positive adjective and for every "no" to a negative adjective. The highest possible score if 40 and the higher the child's score the higher his self concept as measured by this instrument.

1.	good	1.
2.	stubborn	2.
3.	careful	3.
4.	neat	4.
5.	confused	5.
6.	stupid	6.
7.	playful	7.
8.	crazy	8.
9.	brave	9.
10.	angry	10.
11.	upset	11.
12.	scared	12.
13.	normal	13.
14.	chicken	14.
15.	peaceful	15.
16.	trusted	16.
17.	lazy	17.
18.	lovable	18.
19.	nervous	19.
20.	calm	20.
21.	kind	21.
22.	healthy	22.
23.	nasty	23.
24.	babyish	24.
25.	smart	25.
26.	slow	26.
27.	happy	27.
23.	strange	28.
29.	weak	29.
30.	sad	30.
31.	truthful	31.
32.	noisy	32.
33.	pleasant	33.
34.	messy	34.
35.	strong	35.
36.	mean	36.
37.	hardworking	37.
38.	loud	38.
39.	honest	39.
40.	friendly	40.

Need Achievement Test*

Purpose

To assess the extent of children's need to achieve in academic work.

Materials

Four pictures depicting children in different school related settings were employed. The pictures are presented on pages 173 to 176. In addition, a set of standard questions were prepared to be used in conjunction with each picture. These questions are presented on page 172.

Procedures

The test is administered individally. When giving the test, the examiner says: "I am going to show you some pictures one at a time and I want you to tell me a story about each one. I would like you to tell me what you believe the people are thinking, feeling and doing." After the child relates his story, the standardized questions are asked if they have not been answered spontaneously in the story.

Scoring

The stories are read by three examiners working independently. Each story is rated on a 1-5 point scale of achievement orientation. Inter-rater reliability for the stories was quite high with a correlation of over .80. Differences were resolved by discussion.

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* This test was modeled after the McClelland Need Achievement Test but the pictures were selected specifically for this study.

Need Achievement TAT Questions

1. Boy reading on a bus
   - a. What is he doing? What kind of book?
   - b. Where is bus going?
   - c. How does he feel?
   - d. Why does he feel the way he feels?
2. Girls in hall
   - a. Where are they?
   - b. What are they doing?
   - c. If in school, where are they going?
   - d. What are they talking about?
   - e. Like school? What do teachers think of them?
   - f. Why do they have to go to school?
3. Teacher
   - a. Who is he?
   - b. What is he doing?
   - c. Why?
   - d. Kids like him?
   - e. Does he like to teach?
   - f. Does he like children?
4. Boy leaning on book
   - a. What is he doing?
   - b. Why does he feel the way he feels? Does he feel like this always?
   - c. Does he like school?
   - d. What do parents think of what he does in school?
   - e. Is school important for him?
   - f. Why should he go to school?

Test Anxiety Scale

Purpose

To assess the extent of individual children's level of anxiety in general and their anxiety about school situations, in particular.

Materials

The Sarason (1960) test anxiety questionnaire was employed without modification. The measure consists of 41 questions, of which 11 are lie scale items (i.e. items designed to assess whether the child is "faking" good or bad). A copy of the test is attached (pages 178, 179, 180). The lie scale items are circled for easy identification.

Procedures

The test is individually administered. The instructions are provided on the top of the page of questions (page 178). After the instructions are read, the child is assured that his answers are private and that they will not be shown to teachers or to parents.

Scoring

The child is given a score of 1 for every question he answers with a yes. Two scores are obtained, a Lie Scale Score and an Anxiety score. The Lie Scale Score is the number of positive answers to Lie Scale items. The Anxiety Score is the number of positive responses to all other items.

ANXIETY SCALE

I am going to ask you some questions. No one but myself will see your answers to these questions, not your teacher or your principal or your parents. These questions are different from other questions that you are asked in school. These questions are different because there are no right or wrong answers. You are to listen to each question and answer "yes" or "no." These questions are about how you think and feel and, therefore, they have no right or wrong answers. People think and feel differently. For example, if I asked you this question: "Do you like to play ball? some of you would put a circle around "yes" and some of you would put it around "no." Your answer depends on how you think and feel. These questions are about how you think and feel about school, and about a lot of other things. Remember, listen carefully to each question and answer it "yes" or "no" by deciding how you think and feel. If you don't understand a question, ask me about it. Here is the first question.

1. Do you worry when the teacher says that she is going to ask you questions to find out how much you know?

2. Do you worry about being promoted, that is, passing from the _____ to the _____ grade at the end of the year?

(L) 3. Have you ever been afraid of getting hurt?

4. When the teacher asks you to get up in front of the class and read aloud, are you afraid that you are going to make some bad mistakes?

5. When the teacher says that she is going to call upon some boys and girls in the class to do arithmetic problems, do you hope that she will call upon someone else and not on you?

(L) 6. Do you ever worry about knowing your lessons?

7. Do you sometimes dream at night that you are in school and cannot answer the teacher's questions?

(L) 8. Have you ever had a scary dream?

9. When the teacher is teaching you about arithmetic, do you feel that other children in the class understand her better than you?

10. When you are in bed at night, do you sometimes worry about how you are going to do in class the next day?

(L) 11. Do you ever worry about what other people think of you?

12. When the teacher asks you to write on the blackboard in front of the class, does the hand you write with sometimes shake a little?

(L) 13. Do you ever worry?

14. When the teacher is teaching you about reading, do you feel that other children in class understand her better than you?

(L) 15. Do you ever worry about something bad happening to someone you know?

16. Do you think you worry more about school than other children?

17. When you are at home and you are thinking about your arithmetic lesson for the next day, do you become afraid that you will get the answers wrong when the teacher calls upon you?

(L) 18. Do you ever worry that you won't be able to do something you want to do?

19. When the teacher says that she is going to find out how much you have learned, does your heart begin to beat faster?

20. Has anyone ever been able to scare you?

(L) 21. If you are sick and miss school, do you worry that you will do more poorly in your schoolwork than other children when you return to school?

22. Do you sometimes dream at night that other boys and girls in your class can do things you cannot do?

(L) 23. Are you ever unhappy?

24. When you are home and you are thinking about your reading lesson for the next day, do you worry that you will do poorly on the lesson?

25. When the teacher says that she is going to find out how much you have learned, do you get a funny feeling in your stomach?

(L) 26. When you were younger, were you ever scared of anything?

27. If you did very poorly when the teacher called on you, would you probably feel like crying even though you would try not to cry?

28. Do you sometimes dream at night that the teacher is angry because you do not know your lessons?

(L) 29. Do you ever worry about what is going to happen?

In the following questions the word "test" is used. What I mean by "test" is any time the teacher asks you to do something to find out how much you know or how much you have learned. It could be by your writing on paper, or by your speaking aloud, or by your writing on the blackboard. Do you understand what I mean by "test" -- it is any time the teacher asks you to do something to find out how much you know.

30. Are you afraid of school tests?

31. Do you worry a lot before you take a test?

32. Do you worry a lot while you are taking a test?

33. After you have taken a test do you worry about how well you did on the test?

34. Do you sometimes dream at night that you did poorly on a test you had in school that day?

35. When you are taking a test, does the hand you write with shake a little?

36. When the teacher says that she is going to give the class a test, do you become afraid that you will do poorly?

37. When you are taking a hard test, do you forget some things you knew very well before you started taking the test?

38. Do you wish a lot of times that you didn't worry so much about tests?

39. When the teacher says that she is going to give the class a test, do you get a nervous or funny feeling?

40. While you are taking a test do you usually think you are doing poorly?

41. While you are on your way to school, do you sometimes worry that the teacher may give the class a test?

* Lie Scale items are indicated by (L)

Interest Inventory

Purpose

To assess the breadth and variety of interests of particular children in non-academic activities and endeavors.

Materials

An interest inventory (pages 182-184) which consists of 98 questions, broken down into various categories, and which enquired as to the child's participation in various activities.

Procedures

The test is individually administered. In giving the test, the examiner says "I am going to ask you about the kinds of things you do in and out of school, okay?" The various questions are then read to the child and his responses are recorded on the question sheet.

Scoring

The child is given a point for every question that he answer in the affirmative. The larger his total score the larger his breadth of interest as measured by this instrument.

INTEREST INVENTORY

NAME: ______________________________

Music

Do you Play. . .

1. Piano
2. Guitar
3. String Instrument
4. Brass Instrument
5. Woodwind Instrument
6. Percussion Instrument
7. Others - please list
    1.
    2.
    3.
    4.

Do you take lessons in:

1. piano
2. guitar
3. string
4. brass
5. woodwind
6. percussion
7. others - please list
    1.
    2.
    3.
    4.

Arts & Crafts

Do you partake of

1. art lessons
2. photography lessons
3. painting
4. work with clay
5. draw
6. weaving
7. macrame
8. sculpture
9. print making
10. collage
11. silk screening
12. crochet
13. knit
14. woodworking
15. others - please list 1. ______________ 3. ______________

2. ______________ 4. ______________

Sports

Do you play or participate in. . .

1. Baseball
2. basketball
3. soccer
4. ice skating
5. ice hockey
6. skiing
7. horseback riding
8. dancing
9. gymnastics
10. swimming
11. tennis
12. camping
13. roller skating
14. hiking
15. bicycle riding
16. field hockey
17. bowling
18. wrestling
19. yoga
20. trampolene
21. volleyball
22. track and field
23. softball
24. others - please list
    1.
    2.
    3.
    4.

Hobbies

Do you collect or participate in...

1. coins
2. rocks
3. stamps
4. butterflies
5. model airplanes
6. model cars
7. model boats
8. model railroads
9. hot rod cars
10. chess
11. cooking
12. sewing
13. doll houses
14. doll clothing
15. drawing

15. creative writing
16. reading
17. astronomy
18. natura study
19. pets
20. gardening
21. others - please list
    1.
    2.
    3.
    4.

Clubs

Do you belong to. . .

1. brownies
2. Girl Scouts
3. Cub Scouts - Boy Scouts
4. Chess Club
5. book club
6. YMCA
7. YWCA
8. CYO
9. Public Library
10. Camp Fire girls
11. 4-H
12. Church clubs - specify
    1.
    2.
    3.
    4.

13.a. Band (school)
   b. Band (small combo)
14. Record
15. Childrens theatre
16. others - please list
    1.
    2.
    3.
    4.

Household Chores

1. Taking out the garbage
2. shovelling snow
3. babysitting
4. yard work
5. cleaning your room
6. washing the dishes
7. ironing
8. other - please list 1. 2.
   3. 4.

Pupil Activity Scale

Purpose

To assess the nature of a particular child's behavior day in a school setting.

Materials

A six category, time monitored behavior rating scale (page 187) was the test instrument. The categories used and a brief description of each follows:

1. General Content - this describes the specific activity in which the child is involved. It serves as a context for all other categories.
2. Location - if child leaves room for more than five minutes, he should be followed.
3. Affect cues - the observer using a previously agreed upon list of categories, picks one most descriptive of the child's affect.
4. Group size - this designates the number of children with whom the observed child is interacting. Teachers and other adults are not recorded.
5. Structure - 'teacher-structured' describes an activity which the teacher has actively organized and in which she is actively participating. "Teacher-initiated' describes an activity which the teacher has organized but in which she is not actively participating. 'Child-initiated' refers to an activity initiated by the child and carried out independently of the teacher.

6. Teacher role - this refers to the teacher's role in reference to the whole class if either teacher-initiated or child-initiated has been previously used to describe structure.

7. Mode - this refers to materials with which the child is working; that is, with a text, or other strictly academic material or with subject matter not strictly academic in nature (e.g. spelling bee, word games).

8. Interest - if the child wishes to pursue the activity it is considered interest.

See attached recording copy.

Procedures

The scale is used by individual observers who have been trained in its use. The observer randomly selects a single child in a class and observes him for one hour. At the end of every five minute period the child's behavior at that time is reocrded.

Scoring

The number of times the child engages in the various activities for a particular hour are tabulated. This permits comparison between different children in the same classroom and between children in different schools.

PUPIL ACTIVITY SCALE

		LOCATION					AFFECT CUES						GROUP SIZE					STRUCTURE				TEACHER ACTIVITY									MODE		
Time	Activity	Assigned Seat	Unassigned Seat	Open Area	Teacher's Desk	Out of room	Attentive Excited	Attentive Tense	Noisy & Disruptive	Noisy & Busy	Quiet & Busy	Quiet & Idle	1	2	3-5	6+	All	Teacher structured	Teacher Initiated	Child initiated	Child Structured	Telling	Leading	Discussing	Peer	Listening	Supervising	Housekeeping	Individual Attention	No contact	Text	Applied	Interest
05																																	
10																																	
15																																	
20																																	
25																																	
30																																	
35																																	
40																																	
45																																	
50																																	
55																																	
60																																	

Classroom Atmosphere

Purpose

To assess the emotional climate of classrooms by direct observation.

Materials

The measure of Classroom Atmosphere consists of a checklist (page 191) that is filled out by individual observers. The teachers are told that the observers are there to do a classroom atmosphere study for the WOIS. The teachers and schools are promised that they will not be identified beyond the description of inner, middle, etc., schools. Each observer is given instructions on how to fill out the checklist.

Procedure

The Classroom Atmosphere scale was designed for use by individual observers. Each observer is familiarized with the scale (pages 189 and 190), and taught time sampling procedures. That is, the observer is taught to rate behaviors for a given period of time (20 minutes) at different times during the day and in different classrooms.

Scoring

Total scores for the various activities are summed across observers working in a particular school to get an overall view of the atmosphere in the school. Use of the rating scale in different classrooms makes cross-school comparisons possible.

General Instructions for Classroom Atmosphere Study

1. Go to the office of the school, tell them you are from the U of R and here to do the classroom atmosphere study. You have the room numbers so you can figure out where the rooms are.
2. Do not identify teachers, do not show protocols to the administration, staff, teachers, etc. (We will report to them after the study is completed).
3. At the classroom, tell teacher you are from the U of R and here to do World of Inquiry Classroom Atmosphere Study and could you come in and sit down for 20 minutes. If class is leaving for gym, etc., come back later - do other classrooms in the meantime.
4. Do not discuss protocols with other team member. Try to sit in back of the room away from each other.
5. For the first five minutes in each classroom, sit and observe. Last 15 minutes keep a running tally of items 1 through 5. After leaving the classroom, immediately fill in items 6 and 7.
6. Item 1 - put a line down for every time a teacher initiates an interaction with a pupil also every time a child initiates a contact with the teacher.

   Item 2 - Record the number of times teacher uses positive or negative verbalization (on group or individual level).

   Item 3 - Count number of times individual children leave or enter classroom (not when half class gets up and goes to reading, only when an individual goes on an errand or the bathroom, etc.). Record individual entrances and exits for each time same child leaves or enters (if necessary, explain in margins).

   Item 4 - Number of times children interact with each other.

Item 5 - Different children not attending - subjective - if reading a book in one class while lesson is going on, might be ok - then do not record as not attending, depends on teacher's expectations.

Item 6 - Fill out after you leave the classroom - circle one number that most represents where teacher falls on Encouragement/Discouragement scale of discussion.

Item 7 - Authoritarian - teacher makes all decisions
Laissez Faire - no overt control seen
Democratic - control shared

If teacher leans in any one of these directions more than another, circle one, if combination of two modes is equally present, circle two.

7. Record any explanations or suggestions that will be helpful in scoring or developing future ones.

8. Make sure correct names (teachers and yours) are on protocols, and room numbers.

IC
MC
OC
Sub.
WOIS

ROOM # ______________ Date ______________

1. Teacher/child initiated interactions

teacher initiated — child initiated

#______________ — #______________

TOTAL _______ — TOTAL _______

2. Number of times teacher uses negative or positive verbalization

positive — negative

#______________ — #______________

TOTAL _______ — TOTAL _______

3. Number of times individual children leave or enter classroom

Leave — enter

#______________ — #______________

TOTAL _______ — TOTAL _______

4. Number of child/child initiated interactions

____

TOTAL ______________

5. Number of different children not paying attention.

____

TOTAL ______________

6. Rating scale for encouragement - discouragement of discussion (circle one)

ENCOURAGE — DISCOURAGE

1_____2_____3_____4_____5_____

7. Teacher Mode (circle one)

Authoritarian — Laissez Faire — Democratic

SUGGESTIONS:

Summary and Conclusions

It is not easy to summarize the work of six years which is detailed in the preceding pages. Perhaps a more meaningful summation would deal with what has been learned about evaluation rather than with what was learned about the effects of attendance at the WOIS. Of course, the two are inextricably interrelated, so a discussion of what was learned in and about the evaluation of necessity reflects upon the operation of the school and its work. By summarizing some of what was learned about the evaluation it is thus possible to look at the WOIS from a different perspective and that is another way of reviewing the work of the past six years.

Originally the aim of the evaluation was to assess how well the WOIS was attaining some of its objectives (set forth in the introduction to this report). It was really not possible to do this in any adequate way for a number of different reasons. First of all, the goals were too numerous. A program designed to evaluate them all would have been large, costly, and might well have impinged on the educational program. Secondly many of the goals were stated in such a way as to make evaluation difficult or impossible. This was not done deliberately, the goals were honestly set. But the measurement of attitudes and values is still in its infancy and the evaluation teams efforts in this regard were unsatisfactory. Finally there never really were enough funds to do the evaluation job in the way it needed to be done. The evaluation budget was always a tiny fraction of the total school budget. Considering the weight given to the results of the evaluation, reluctance to allocate funds for this function appears penny wise and pound foolish.

There were other lessons that the evaluation team learned the hard way. The scarcity of good measures of academic as well as of non-academic skills and abilities came as something of a surprise. Even well known and standardized instruments were found to have serious limitations in practice. The lack of statistical conversion tables for comparing performance on different, commercially produced achievement tests, is a case in point. In the non-academic domain of assessment one confronts a genuine wasteland. A good portion of our time and effort during the evaluation period was devoted to test construction, validation and replication. Although this activity was necessary, it took much needed time and resources away from the evaluation proper. Perhaps because of poor communication, these test construction efforts were not always understood by WOIS school personnel and were sometimes viewed as "fringe benefits" rather than legitimate evaluation efforts.

A persistent problem in evaluation, and one that this evaluation team did overcome had to do with balancing the needs of the school with the needs of the evaluation. If evaluation activities are too extensive, and if children are always out being tested, then the evaluation interferes with the very process it seeks to measure and is no longer valuable. On the other hand, if evaluation activity is too minimal, there is no real way to assess the actual ebbs and flows of the educational process. The task for the evaluation is to be present without being intrusive and that is a difficult position to take.

On this score, the evaluation team in cooperation with school personnel, came out rather well. Teachers and staff, for the most part, did not express the feeling that children were being seen too often or that the evaluation team was absent too much. As might be expected, disagreements sometimes arose as to who should do what. Occasionally the evaluators felt that they were being asked to do tasks that were rightfully in the teacher's domain and teachers sometimes felt that they were being asked to do some of the evaluators' work. Although such frictions were minimal, they did exist. They spoke to the need for continual meeting and discussion between evaluation team and host school. It is, perhaps, an obvious lesson but one that had to be learned the hard way.

Still another problem that had to be dealt with were the differing conceptions of evaluation that were held by the evaluation team on the one hand, and school personnel on the other. The evaluation team came from an academic background and saw evaluation as a research project that required controls, measurement and standardized procedures. They were cautious in reporting any findings and interpreting them because of an awareness of the difficulties with the tests, administration and other uncontrolled factors. Again and again the evaluation team sought more time to test other possible interpretations to findings before reaching conclusions.

School personnel, who came from an educational background, were more interested in definitive results that could be reported to the public. This desire was understandable. Each year the school personnel were asked to defend the WOIS which was expensive and needed to be justified in concrete ways. School personnel needed the evaluation results to fight for funds and to justify the school's continued existence. It was inevitable that frictions would arise, as they did, between the diverse interests of the school and the evaluation team.

It is important to examine this conflict if any lessons are to be learned from it. The evaluation team's scientific reluctance to make definitive statements is understandable within the academic framework within which it generally operates. Likewise, the school personnel's need for public information of an unequivocal sort is also understandable. Both groups are operating under guidelines and principles that are right and reasonable to them but not paramount to the other group. Once this is understood and appreciated by both sides, some compromises of a reasonable nature can be worked out. One possibility is a dual report system with one report going to the scientific community and another going to the educational community. Some balance between the conflicting needs of the two groups is required.

Other problems of evaluation are more general but are nonetheless germane to the work described here. Education is such a complex and multi faceted system that one could never assess all of its components. Selection is necessary and however well informed it may be, it cannot help but be arbitrary as well. The domains chosen for assessment such as pupil attitudes, self concept, and so on, seemed reasonable at the time but may not have tapped some of the real benefits gleaned from the WOIS experience. There is always the possibility that other instruments or procedures would have revealed effects that were merely obscured by the measures that were employed. It is hoped that this was not the case, but one can never be sure.

In the end, perhaps the most important lesson to be learned from the evaluation is that education is essentially a dynamic process and that schools are always societies in transition. As a consequence, evaluation can never be static and fixed but has to be flexible enough to adapt to the inevitable changes in the educational process without, at the same time, affecting that process. The price of a successful evaluation is sustained vigilance to the changing vicissitudes of the school. If the present evaluation had a major failing, it was its failure to include procedures for monitoring changes in the organization, framework, etc., of the school so that evaluation procedures could be adapted accordingly. The most important lesson to be learned, then, is that evaluation cannot be done in a vacuum and must be constantly tuned to the changing rhythms and keys of the educational process it seeks to assess.

These are but some of the lessons that were learned in conducting the WOIS evaluation. Under the circumstances of a constantly changing school environment and of changing instruments, procedures and evaluation personnel, it is difficult to be highly confident of the results reported here. The findings should not be used either to indict or to extol the WOIS. At best the results reflect and describe some facets of a school in transition whose impact is always relative to the social climate within and without the school, the particular children attending it and the areas evaluated. Unfortunately, evaluation procedures produce numbers which provide only a static picture of ongoing activities. The interpretation of the results should take account of the discrepancy between static figures and dynamic processes. Statistics are always but a faint shadow of the world they are reflecting. Numbers cannot reflect the happiness, the directed activity, the independence of mind nor the creative thrust to be observed in WOIS pupils. To be sure, such qualities can be observed in children attending other schools as well. But the WOIS created this atmosphere by design and thus helps us to understand how to construct such school environments.

The World of Inquiry is an experiment in education and this report describes efforts to evaluate some of its effects upon children. But it may be that the most important effects are really not capable of being measured. How does one measure joy and happiness children experience in attending the school? It is hard to imagine that such joy and happiness could be detremental to the educational process. For if children are joyful and happy in what they are about they will draw the last drop of value from every experience, every material, every challenge with which they are confronted. Helping children to fully utilize and appreciate their experience is what good education is all about. It was the overriding goal to which the WOIS aspired and that it often attained.

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